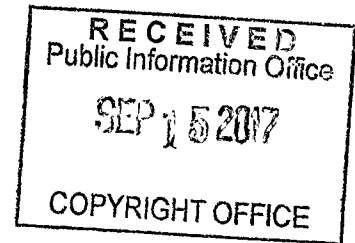
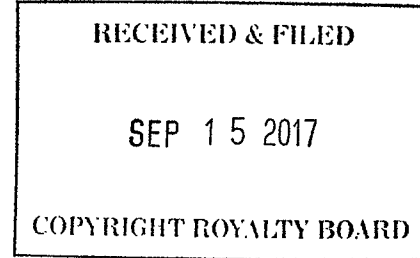


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In re  
**DISTRIBUTION OF CABLE  
 ROYALTY FUNDS**

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 ) **CONSOLIDATED PROCEEDING**  
 ) **NO. 14-CRB-0010-CD**  
 ) **(2010-13)**  
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**WRITTEN REBUTTAL STATEMENT OF THE  
 SETTLING DEVOTIONAL CLAIMANTS**

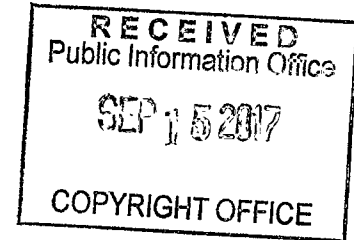
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September 15, 2017

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In re  
DISTRIBUTION OF CABLE  
ROYALTY FUNDS

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) CONSOLIDATED PROCEEDING  
) NO. 14-CRB-0010-CD  
) (2010-13)  
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WRITTEN REBUTTAL STATEMENT OF THE  
SETTLING DEVOTIONAL CLAIMANTS

Pursuant to 17 U.S.C. § 803(b)(6), 37 C.F.R. § 351.11, and the Judges' July 21, 2016 Order Regarding Discovery, the Settling Devotional Claimants ("SDC") hereby submit their Written Rebuttal Statement in connection with the above-referenced proceeding to determine the Phase I Allocation of the 2010 through 2013 cable royalty funds attributable to syndicated Devotional programming.

The SDC's Written Rebuttal Statement includes the written rebuttal testimonies of Dr. Erkan Erdem of KPMG, LLC, and Mr. John Sanders of Bond & Pecaro, Inc., which are attached hereto.

Respectfully submitted,

/s/ Matthew J. MacLean

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**CERTIFICATE OF SERVICE**

I, Jessica T. Nyman, hereby certify that a copy of this Written Rebuttal Statement of the Settling Devotional Claimants was sent via Federal Express, and sent electronically, this September 15, 2017 to the following:

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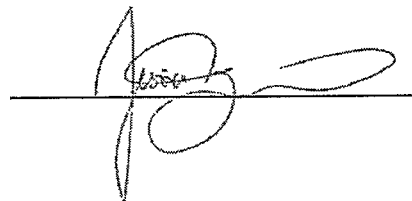
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Jessica T. Nyman



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**In re**

**DISTRIBUTION OF CABLE  
ROYALTY FUNDS**

**) CONSOLIDATED PROCEEDING  
) NO. 14-CRB-0010-CD  
) (2010-13)  
)  
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**Rebuttal Testimony of Erkan Erdem, Ph.D.**

**September 15, 2017**

## **PUBLIC VERSION**

### **Testimony of Erkan Erdem, Ph.D.**

My name is Erkan Erdem. I am a Managing Director at KPMG. KPMG was retained by the Settling Devotional Claimants (SDC) to review economic analyses conducted by economic experts from different claimants in this consolidated proceeding for cable 2010-2013 royalties, and to comment on the appropriateness of these approaches in assisting the Judges with the determination of “relative market value.” I provided expert witness testimony on March 9, 2017, on this matter as part of SDC’s Amended Written Direct Statement, and a corrected testimony on April 28, 2017, in response to an issue raised by the Canadian Claimants Group. The purpose of this testimony is to provide additional analyses for the judges to consider.

#### **I. Executive Summary**

I reviewed methodologies and analyses provided by experts for other claimants (Canadian; Commercial Television (CTV); Joint Sports (JS); MPAA-represented Program Suppliers (PS); and Public Television (PTV)) in this proceeding to determine “relative market value”: “the price at which the right to transmit a program carried on a distant broadcast signal would change hands between a willing buyer (a CSO [Cable System Operator]) and a willing seller (a copyright owner), neither being under any compulsion to buy or sell.”<sup>1</sup> Because such a market does not exist, the Bortz and Horowitz surveys were designed specifically to understand and measure value for copyrighted content that are retransmitted. Due to complexities in this environment, royalty shares that are implied by the surveys may not be precise (and may require adjustments), but precision is not the standard set by the Judges. Instead, the experts are expected

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<sup>1</sup> *In re Distribution of Cable Royalty Funds 2000-2003*, Final Determination of Distributions Phase II, Docket No. 2008-02 CRB CD 2000-2003 (Phase II) (Aug. 13, 2013) at 37.

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to provide methodologies that allocate the royalties among claimants within a “zone of reasonableness.”<sup>2</sup>

Regression analysis is a commonly used technique that allows for estimating relationships among variables. However, it may not be the appropriate methodology to answer every problem, such as how to determine relative market value as defined in these proceedings. As noted in my earlier testimony and re-emphasized in this testimony, regressions based on minutes of programming and fees generated used by CTV, Canadian, and JS witnesses, or the viewership regression used by PS witness, are not appropriate measures of market value in these proceedings.

Moreover, in addition to being flawed in principle, each of the regression methodologies presented is flawed in design, and is highly sensitive (or volatile) to minor changes in included dependent variables, and therefore an unreliable benchmark for determining relative market value and allocating shares in this proceeding:

- The regression presented by Dr. Crawford, for CTV, contains a deep flaw in its algorithm rendering it highly sensitive to data processing steps, such as the order in which input data is sorted at various points in the process. CTV belatedly presented code that partially treated the symptom, but has not addressed the root flaw. Even setting aside this flaw, Dr. Crawford’s model, like Dr. Israel’s model on behalf of JSC, is not robust, and is highly sensitive to changes in included variables, including to corrections that significantly improve the statistical fit.
- Dr. George’s regression model on behalf of Canadians is largely derivative of Dr. Crawford’s model, and therefore implicitly incorporates all of the flaws in Dr.

<sup>2</sup>

*In re Distribution of Cable Royalty Funds 2000-2003*, Final Determination of Distributions Phase II at 7.

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Crawford's model, while adding a few more of her own. Dr. George's approach is indirect and imprecise, relies on unsupported assumptions, and introduces calculation errors.

- Dr. Gray's viewership regression model on behalf of PS relies on a dataset that Dr. Gray has rendered unusable by superimposing incompatible sampling methodologies. He also improperly attributes values (zeroes) to missing data points, and he relies on a station sample of questionable representativeness. Finally, Dr. Gray's predicted results do not fit the data on which he relies, demonstrating further flaws in his model.

## II. Materials Considered

I have obtained, reviewed, and used the following documents and data files during the preparation of this testimony:

- Cable Statements of Account for 2010-2013 from Cable Data Corporation.
- Programming data for WGN, both for the local market and the distant market (via satellite), for 1999-2013 from Tribune Media Services.
- Written Direct Statement Regarding Allocation Methodologies of MPAA-represented Program Suppliers, In the Matter of Distribution of the 2010, 2011, 2012, and 2013 Cable Royalty Funds, and all underlying data produced.
- Amended and Corrected Written Direct Statement Regarding Allocation Methodologies of MPAA-represented Program Suppliers, In the Matter of Distribution of the 2010, 2011, 2012, and 2013 Cable Royalty Funds, and all underlying data produced.
- Errata to Amended and Corrected Written Direct Statement Regarding Allocation Methodologies of MPAA-represented Program Suppliers, In the Matter of Distribution of the 2010, 2011, 2012, and 2013 Cable Royalty Funds, and all underlying data produced.
- Second Errata to Amended and Corrected Written Direct Statement Regarding Allocation Methodologies of MPAA-represented Program Suppliers, In the Matter of Distribution of the 2010, 2011, 2012, and 2013 Cable Royalty Funds, and all underlying data produced.
- Written Direct Statement of the Joint Sports Claimants, *In re* Distribution of Cable Royalty Funds, and all underlying data produced.

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- Allocation Phase Direct Case of The Commercial Television Claimants, *In re* Distribution of Cable Royalty Funds, and all underlying data produced.
- Corrected Written Direct Testimony of The Commercial Television Claimants, *In re* Distribution of Cable Royalty Funds, and all underlying data produced.
- Written Direct Statement of the Settling Devotional Claimants, *In re* Distribution of Cable Royalty Funds, and all underlying data produced.
- Written Direct Statement of Public Television, *In re* Distribution of Cable Royalty Funds, and all underlying data produced.
- Amended Written Direct Statement of Public Television, *In re* Distribution of Cable Royalty Funds, and all underlying data produced.
- Corrected Amended Written Direct Statement of Public Television, *In re* Distribution of Cable Royalty Funds, and all underlying data produced.
- Direct Case of the Canadian Claimants, In the Matter of Distribution of the 2010-2013 Cable Royalty Funds, and all underlying data produced.
- Amendment to Direct Case of the Canadian Claimants, In the Matter of Distribution of the 2010-2013 Cable Royalty Funds, and all underlying data produced.
- Corrections to the Amendment and to the Direct Case of the Canadian Claimants, In the Matter of Distribution of the 2010-2013 Cable Royalty Funds, and all underlying data produced.
- Final Distribution Order, In the Matter of Distribution of the 2004 and 2005 Cable Royalty Funds.
- Statement of Joel Waldfogel, In the Matter of Distribution of the 2004 and 2005 Cable Royalty Funds.
- Rebuttal Testimony of Dr. Michael A. Salinger, In the Matter of Distribution of the 2004 and 2005 Cable Royalty Funds.
- Direct Testimony of Marsha E. Kessler, In the Matter of Distribution of the 2000, 2001, 2002, and 2003 Cable Royalty Funds.
- Final Determination of Distributions Phase II, In re Distribution of Cable Royalty Funds 2000-2003.

### III. Purpose of the Testimony

As I detailed in my earlier testimony that was submitted as part of the Amended Written Direct Statement of the SDC, dated March 9, 2017, determining “relative market values” for all



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claimed programs is a challenging task given that a free market does not exist and that royalties are purely based on a complex formula (due to compulsory licensing statutes) that does not directly factor in individual programs. In the same testimony, I reviewed two types of approaches that were proposed by other claimants: surveys that collect targeted information from decision makers at CSOs based on custom questionnaires (i.e., Bortz and Horowitz surveys) and econometric (or regression) methods. I concluded that surveys may provide very reasonable answers that can be adjusted for potential flaws because they are specifically designed to answer the “relative market value” question. I also argued that the regression approaches presented do not measure relative market values, and I provided analyses showing that they are unreliable and highly sensitive to small changes, raising concerns about the potential for manipulation. Since my earlier testimony, I had a chance to conduct more in-depth reviews of analyses provided by other economic experts. In the next sections, I provide the details of my reviews and assessments.

### **IV. Regression Approaches to Determine Relative Market Value**

#### **A. Fee Generation Based Regressions Are Unrelated to Market Value.**

Before discussing the specific analyses presented by the experts, I discuss broadly the applicability of regression analysis in the present context. Multiple experts testifying in this proceeding have stated that regression analysis based on minutes of programming and fees paid under the statutory license is an appropriate framework to infer the value of distant programming. Dr. Israel (for JS), Dr. Crawford (for CTV), and Dr. George (for Canadians) attempted to estimate the marginal effect of each minute of programming for claimant categories using regression analysis in which the dependent variable is the royalty fees paid by a system and independent variables include minutes of programming for each claimant category and other

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control variables. I refer to these models as “Waldfoegel-type regressions” as the starting point for the regression models presented by Dr. Israel, Dr. Crawford, and Dr. George is the approach that was first presented by Dr. Waldfoegel in the 2004-2005 proceedings on behalf of CTV.<sup>3</sup>

I disagree with other experts’ attempts to defend the appropriateness of a regression analysis as a measure of value in this proceeding. As an example, Dr. George discusses using regression analysis to estimate the price of bread using data on shopping basket expenditures and the composition of each basket (i.e., quantities for each item).<sup>4</sup> Dr. George states:

Distant signal bundles are composite goods analogous to grocery carts or homes. ... While we cannot directly observe expenditures associated with particular program types, we can observe the expenditures of cable systems on distant signal bundles as well as the quantity of programming of various types in each bundle.

... Taken together with carriage decisions, royalty expenditures reveal the information needed to estimate the value of distant signals and the programming contained therein.

By analogy, Dr. George argues that one can apply the same reasoning and approach to estimate the price (or value) of a minute of distant programming, using royalties, amount of distant programming in minutes, and other control variables. However, the analogy is flawed for several reasons. For one, it ignores the process by which the royalties (costs of shopping baskets in Dr. George’s analogy) are calculated. In the supermarket example, the prices of the items are posted, and a cashier simply calculates the total cost of the basket given the prices. There is a direct relationship between the prices, quantities, and total value of the shopping basket in a demand and supply framework. Given the data on basket expenditures and quantities of the items in each basket, a regression analysis can be used to estimate the average price for each item.

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<sup>3</sup> *In the Matter of Distribution of the 2004-2005 Cable Royalty Funds*, Statement of Joel Waldfoegel (June 1, 2009).

<sup>4</sup> *In the Matter of Distribution of the 2010-2013 Cable Royalty Funds*, Direct Case of the Canadian Claimants, Exhibit CCG-5 at 12.

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In the case of the cable royalty funds, the total amount of royalties is determined by a government-dictated formula, and is essentially a calculation that takes into account system gross receipts, statutorily mandated categories of signals (translated into distant signal equivalents or DSEs), statutory rates for each DSE, whether the system pays a premium for additional signals to which a 3.75% royalty rate applies, and a few other variables. Even for systems with no DSEs, there is a minimum statutory payment required. The price (or value) of an additional minute of distant programming does not exist in the statutory formula, and there is no direct relationship between the value of an additional minute of distant programming and the royalty amount.

Another analogy discussed by Dr. George relates to the housing market. While we do not observe the values of specific home features (e.g., number of bedrooms, bathrooms, square footage, location) directly, we can estimate those from observable data on the amount buyers paid for homes with particular home features. In a simplistic example, if two homes next door to each other are identical in every respect, except that one has an additional bathroom, and the difference in the market price paid is \$20,000, it may be reasonable to attribute the price differential to the presence of the additional bathroom. Similar to the shopping basket analogy, the price of a home includes the price of the land, the price of the building, etc. Although not observed, there is a direct relationship between the price of a home and various home features, and applying a regression analysis will uncover implied prices for each feature.

This analogy is also flawed since the process of buying and selling homes establishes a total market value of the home even though prices for different features are not observable. Given that, and data on the characteristics of the home, regression analysis can uncover the implied values of the various home characteristics (i.e., an additional bathroom) in a free market.

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In the case of the royalty funds, there is no free market through which the interactions of buyers and sellers establish the total royalty amount. It is merely determined by a formula.

In her testimony, Dr. George also states:

It is important to note that regression can be used to estimate the value of unpriced attributes even when the price of the composite good is influenced by regulation. Altering the housing example slightly, suppose the goal was to estimate the impact of shade trees on apartment rental prices, where rents for some units are capped by rent control. In this case an indicator variable identifying units at the cap might be included in the model. This approach would effectively estimate a different constant or intercept term for the set of apartments at the cap.<sup>5</sup>

But regulation regarding rental rate caps and the regulation regarding the royalty payment calculations are very different. In the case of rental rates, there is still a market where renters and landlords interact to determine rental rates up to the allowable cap. There is no such market for distant minutes or distant programming content. The addition of an indicator variable would not solve the problem when the price is prescribed, rather than simply capped.

Relatedly, in the rental context, there is no minimum rental fee for those potential tenants who decide not to rent. Conversely, in the copyright royalty context, even cable systems that choose not to retransmit anything are required to pay a minimum fee, casting further doubt on whether the amount of fees paid is a reflection of market value.

In my prior written statement, I provided several arguments against relying on regression analysis to calculate the value of distant programming. I would add that by the mechanics of how it works, a Waldfogel-type regression will always produce a set of coefficients on distant minutes programming. It is up to the analyst to evaluate if these estimated coefficients reflect value, and can be relied upon to answer the specific question posed. Royalties under the statutory

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<sup>5</sup> *In the Matter of Distribution of the 2010-2013 Cable Royalty Funds*, Direct Case of the Canadian Claimants, Exhibit CCG-5 at 11-12.

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license are essentially determined by gross receipts, which in turn depend on the number of subscribers, tiers offered, and the pricing of those tiers. While (after accounting for these factors) distant minutes of programming could appear to be correlated with gross revenues or royalties, they are most certainly not the primary, secondary, or even tertiary drivers of gross revenue and royalties.<sup>6</sup> For these reasons, I do not see a reasonable basis to interpret the regression coefficients as an indication of marginal value.

Further, the mere existence of a correlation between minutes of program categories and gross revenues or royalties does not imply causation. It could be tied to the presence or absence of other available local programming, differences in population size or demographics, or the business life cycles of either the retransmitted stations or the cable systems retransmitting them. For example, if regression analysis shows that stations with higher amounts of CTV programming are retransmitted by higher-revenue generating cable systems on average, it could simply mean that television stations that are large enough and successful enough to be attractive to distant cable systems are also likely to be successful enough to produce their own CTV programming for local appeal. The assumption that the CTV programming is the cause of the station's success, rather than merely a byproduct, is hypothetical, at best.

Even if Waldfogel-type regressions could be used to assign values to each minute of distant programming, there are additional problems with the variables used in the approach. Specifically, the Waldfogel-type regressions rely on the amount of royalty fees paid by CSOs based on a "fee generation" formula developed by Cable Data Corp (CDC). As discussed in Marsha Kessler's testimony regarding the CDC data, gross receipts (the basis for the royalty fee

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<sup>6</sup> I further illustrate this point in the context of Dr. Crawford's model later in the testimony.

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calculations) include subscriber fees from both distant, local, and premium subscribers from all tiers of service containing broadcast (distant) stations:

... if a cable operator offered its local and distant subscribers a basic \$14 tier, and a distant station in the expanded basic \$25 tier, the operator must calculate its gross receipts based on the \$39 (\$14 plus \$25) paid by all subscribers who receive the basic and expanded basic tiers. Operators are not allowed to prorate fees for tiers of service containing both broadcast and non-broadcast offering when reporting gross receipts.

If the cable operator also offered premium channels, such as HBO and or ESPN in a separate tier of service that also included a broadcast channel, that tier also needs to be included in the gross receipts reported to CDC.<sup>7</sup>

Hence, royalty fees are affected by many factors unrelated to content (or minutes of program time) on distant signals, such as a) revenues for certain CSO equipment included within gross receipts, and b) revenues for certain tiers of specially priced programming that is on the same tier as distant signals. Further, CSOs pay minimum copyright royalty fees even if they carry no distant signals, which effectively means that the fees paid do not even equate to the marginal costs of retransmission.

Additionally, according to the instructions for completing the Statement of Account SA3 (Long Form) for secondary transmissions, gross receipts also include revenues from other services such as monthly cable box rentals, as well as fees from both residential and commercial customers:<sup>8</sup>

The gross receipts you enter in secondary transmissions of primary broadcast transmitters. They include the full amount of monthly (or other periodic) service fees for any and all services or tiers of services that include one or more secondary transmissions of television or radio broadcast signals, for additional set fees, and for converter fees. All such gross receipts shall be aggregated and the DSE calculations shall be made against the aggregated amount. Gross receipts for

<sup>7</sup> *In the Matter of Distribution of the 2004, 2005, 2006, 2007, 2008 and 2009 Cable Royalty Funds*, Written Direct Case of the MPAA-Represented Program Suppliers, Volume II, Direct Testimony of Marsha Kessler at 9-10.

<sup>8</sup> Library of Congress, Copyright Office, Statement of Account SA3 (Long Form), at p. 2. Under item E (Secondary Transmission Service: Subscribers and Rates), the form lists the following categories of service: Residential, Hotel/Motel, Commercial, Converter.

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secondary transmission services do not include installation (including connection, relocation, disconnection or reconnection) fees, separate charges for security, alarm or facsimile services, charges for late payments, or charges for pay cable or other program origination services: Provided that, the origination services are not offered in combination with secondary transmission service for a single fee.<sup>9</sup>

Because royalty fees are calculated from gross receipts, they vary due to revenues from these additional services (e.g., cable box rentals, additional boxes). In addition to being inappropriate in this context, regression analysis would correlate minutes of distant programming with the CDC royalty data even when they are clearly not related.<sup>10</sup>

In maximizing profits, cable operators need to evaluate multiple parameters and decisions involving many different markets and subscriber groups. More generally, the Waldfogel-type regressions do not reflect the complex decisions profit maximizing cable operators consider and make in a given year.

In the rest of this section, I present further analyses of the Waldfogel-type regressions used by Dr. Crawford and Dr. George.<sup>11</sup> The purpose of these analyses is to demonstrate that Waldfogel-type regression results and implied royalty shares are very sensitive to the choice of variables used in the model as well as model variable transformations, and are therefore susceptible to manipulation to achieve a desired result.

### **B. Dr. Crawford's Model**

Dr. Crawford's model is a Waldfogel-type regression, with three additional refinements related to the data used: (1) the model uses all 4 years-worth of data (2010 through 2013), (2) the

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<sup>9</sup> Library of Congress, Copyright Office, Statement of Account SA3 (Long Form), at vii.

<sup>10</sup> This issue is also known as measurement error in standard economics textbooks (see, for example, William H. Greene, *Econometric Analysis*, 4<sup>th</sup> edition, p. 375-380). Although measurement error in the dependent variable (royalty fees) might not lead to biased coefficient estimates (marginal values of each minute of programming), their standard errors would be higher making the estimates less precise due to the additional "noise."

<sup>11</sup> My theoretical arguments against using Waldfogel-type regressions in this proceeding were included in my earlier testimony that was submitted as part of the Amended Written Direct Statement of the SDC, dated March 9, 2017. I discussed Dr. Israel's regression model in my earlier testimony.

model uses the full population of programs carried on all imported distant broadcast signals (rather than samples of stations), and (3) the model leverages the CDC data by subscriber groups (rather than the more aggregated CDC data). In addition to the three data refinements, Dr. Crawford also transforms the dependent variable in the model (by taking the natural logarithm of royalty fees as opposed to using the linear form as Dr. Israel does) and includes fixed effects for each Statement of Account ID.

**1. Dr. Crawford's Model Is Unrelated to the Economic Factors He Identifies.**

Before presenting his model results, Dr. Crawford discusses the economics of distant carriage and the factors influencing distant carriage decisions, including the nuances associated with bundling channels and its implications for profit maximization. In his framework, there are two important factors influencing distant signals carriage: the difference between incremental revenue and cost, and negative correlation. The incremental revenue from carrying a distant signal arises from the ability to attract new subscribers, or to avoid losing subscribers. The incremental cost depends on the license fee for the signal. To illustrate negative correlation, he presents an example where, given subscriber preferences for content, cable operators can generate more profits by selling channels as a bundle (relative to selling individual channels).

As an economist, I found Dr. Crawford's discussion intellectually stimulating; however neither of the factors he identifies contributes to the conceptual foundations of the Waldfogel-type regressions, nor is either of the two factors explicitly reflected in Dr. Crawford's regression model. Dr. Crawford presents no data to account for negative correlation. With respect to the consideration of incremental revenue versus cost, the cost side is driven by the statutory license,



and channels with the same DSE will have the same cost; however, DSE type is not part of Dr. Crawford's model either.<sup>12</sup>

Dr. Crawford's discussion does, however, bring out the point that bundling channels has important implications for profit-maximizing cable operators, and any analysis not reflecting that is most certainly flawed. Furthermore, Dr. Crawford highlights a tension between using broadcast distant minutes to infer value and the concept of negative correlation: a subscriber may value only program A in a given bundle, and not attach any value to the other channels and programs in the bundle, and another subscriber may value only program B in the same bundle, and not attach any value to the other channels and programs in the bundle. This goes to show that subscribers likely do not think of distant broadcasts in terms of total minutes, the principal unit on which Dr. Crawford's regression model operates. A more natural unit would be the availability of particular programs, regardless of their duration or frequency.

**2. Replication Failures Show Deep Flaws in the Algorithms Underlying Dr. Crawford's Regression.**

Dr. Crawford performs two separate regression analyses, an "initial" analysis with all distant minutes and a second "non-duplicated" analysis with only non-duplicated distant minutes. The models are the same, but the non-duplicated analysis used non-duplicated distant minutes and an additional variable (total non-duplicated minutes). The non-duplicated analysis attempts to account for the presence of network programming (but not non-network programming) that duplicates programming offered either on a local broadcast station or on another imported distant broadcast station.

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<sup>12</sup> In the analyses I present later in this testimony, I include the number of permitted DSEs as another independent variable.

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As a first step to analyze Dr. Crawford's model, I used the computer codes provided by CTV to replicate all figures in Dr. Bennett's and Dr. Crawford's corrected testimonies. I was unable to replicate Dr. Crawford's final results in his testimony, so I investigated the matter further. I compared all the temporary files created by the codes to the temporary files provided by CTV and found that the file "Station ID pairs within DMA (with\_year).txt" that I created using the computer code "04 Create list for simulcast analysis.do" was different than the file provided by CTV.

Further investigation showed that the likely cause for the discrepancy originated from a *bysort* command in the code that sorts data based on a non-unique field. Because the data is sorted based on a non-unique variable, the code could treat the data in a different order depending on the particular software or hardware used, or even based on chance. This seemingly minor glitch in the way in which the algorithm sorted the data illuminated the surprising fact that Dr. Crawford's results are highly sensitive to the order in which the code presents the data.

Unfortunately, because algorithms provided by Dr. Bennett and Dr. Crawford are so bulky and take so long to run (almost a week to run all the way through), I did not have time for sufficient testing to provide a solution to the problem. But the fact that Dr. Bennett's data processing can yield different results (and impact Dr. Crawford's analyses) depending on the order of the presentation of the input data demonstrates that there is a deep undiscovered flaw in the program.

Only a few days before this rebuttal testimony was due, CTV's attorneys provided an updated code that corrected other issues in the data processing; however, this updated code did not address the underlying flaw that the results are highly sensitive to the way in which the data is sorted at various points in the process. However, to be able to continue my analyses for this

report, I replaced the output of this code with the file provided by CTV instead, and continued the process with the rest of the codes after this step.<sup>13</sup>

To borrow from Dr. George's shopping basket analogy, the discovery that Dr. Crawford's analysis is sensitive to the order of the presentation of the data is equivalent to discovering that the price of eggs varies depending on whether you place a carton of milk before or after the eggs in check-out line. We do not have to understand the underlying problem in order to conclude that there is something wrong with either the cash register or the cashier.

**3. Dr. Crawford's Model Is Not Robust, and Is Highly Sensitive to Minor Changes in Included Variables.**

Distant minutes of programming are not the main drivers of royalty payments. In Waldfoegel-type regressions, such as Dr. Crawford's, distant minutes are assigned a predominant role, because most of the variables (other than those related to the number of subscribers) in the model relate to distant minutes or number of stations that rebroadcast, and the resulting royalty shares rely on the estimated coefficients on total distant minutes for various categories. As an initial exercise, I tested if distant minutes explain a significant share of the variation in royalty fees (log-transformed) by estimating a regression model with only total distant minutes for each claimant group as the independent variables. In fact, as shown in **Exhibit R1** (Models A & B), distant minutes explain very little of the variation in royalties, as measured by the Adjusted R-squared (approximately 0.02 for the initial and non-duplicated analysis, respectively). Similarly, the incremental increase in explained variation (as measured by the change in the Adjusted R-

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<sup>13</sup> Even after using the file provided by CTV and the updated code, the regression results and implied shares of distant minute royalties by claimant categories for both the initial and non-duplicated analyses were slightly different than the results presented by Dr. Crawford. Based on a comparison of the figures I produced with the CTV codes and the figures provided by CTV, this is likely due to the slight differences in the distant minute variables for each claimant category. The figures that relied on the distant minute variables in Dr. Bennett's and Dr. Crawford's corrected testimonies were slightly different from the figures I produced with CTV's codes. Specifically Figure 4 in Dr. Bennett's corrected testimony and Figures 11, 12, and 14-24 in Dr. Crawford's corrected testimony.

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squared) in Dr. Crawford's model with and without the distant minute variables for each claimant group leads to the same conclusion (**Exhibit R1**, Models C, D, E, and F): Most of the variation (approximately 0.23 out of 0.25) is explained by factors other than the distant minute variables. Finally, just calculating correlations between royalties and distant minutes for each claimant group leads to the same conclusion that distant minutes are at most very weakly correlated with royalty payments.<sup>14</sup> Even though the regression coefficients technically would provide estimates of marginal effects, it is clear that the distant minutes for different claimant categories are not the main drivers of differences in royalties paid across different systems. As such, any measurement of value or share allocation based on these models would not be reliable.

Next, I evaluated the change in the resulting shares from using a log-transformation of the lagged number of subscribers variable, instead of using the untransformed variable. The transformation is motivated by the fact that royalties depend on gross revenue, which in turn depends in large part on the number of subscribers. Dr. Crawford's log-transformation of royalty fees is therefore inconsistent with his decision not to transform the closely correlated variable of lagged number of subscribers. Log transforming the number of the lagged number of subscribers is more internally consistent with the transformation Dr. Crawford applied to the dependent variable, royalty fees.

As presented in **Exhibit R2** (initial analysis) and **Exhibit R3** (non-duplicated analysis), this change alone increases the models' Adjusted R-squared approximately **4 times**, to above 0.97 (Model 1) compared to around 0.25 in Dr. Crawford's original model (Model 0),

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<sup>14</sup> The absolute value of the average correlation between the distant minutes for each claimant group and log-royalties is about 0.040, with the highest being 0.081 for distant sports minutes. The absolute value of the average correlation between distant minutes and the untransformed royalty amount is slightly higher at 0.043, and the highest is 0.076 for distant CTV minutes. The average correlations using non-duplicated minutes are similar, and the highest is 0.081.

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demonstrating a much better statistical fit.<sup>15</sup> For both the initial and the non-duplicated analyses, using the log-transformation increases the PS share by approximately 2 percentage points, increases the JS share by approximately 12-13 percentage points, and reduces the CTV share by approximately 11 percentage points. The PTV share is reduced by approximately 4 percentage points, and the Devotional share increases by approximately 1 percentage point. The Canadian share decreases by approximately 0.2 percentage points. Model 1 in **Exhibits R2 and R3** presents the royalty shares from the regression analyses after transforming the lagged number of subscribers based on Dr. Crawford's initial and non-duplicated analysis, respectively.

As discussed in my earlier testimony, in Dr. Israel's model, I found that the number of distant subscriber instances in the prior accounting period accounts for a larger share of the variability in total royalties than the total number of subscribers in the previous period. Therefore, in addition to the log-transformed lagged number of subscribers, I added the log-transformed lagged number of distant subscriber instances to the regression models as an additional sensitivity analysis.<sup>16</sup> The log-transformed number of distant subscriber instances in the previous period variable is statistically significant and, as shown in Model 2 of **Exhibits R2 and R3**, the Adjusted R-squared increases in both analyses, again showing a better statistical fit and a high level of sensitivity to the added variable.

I conducted another analysis that is motivated by the more granular CDC data Dr. Crawford uses in his analysis. Both the initial and the non-duplicated distant minute variables that are used in Dr. Crawford's models contain many zeros (i.e., instances when there was no distant content being retransmitted for a particular claimant category). The percentage and

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<sup>15</sup> Note that the interaction terms that are based on the lagged number of subscribers were also re-calculated and added to the regression.

<sup>16</sup> The data set with number of distant subscriber instances for each system and subscriber group is provided by CDC.

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number of zeros varies significantly by claimant category: the Canadian distant programming minutes have about 94 percent zeros, followed by PTV with approximately 59 percent, JS with approximately 10 percent, and between 5-8 percent for the remaining categories. These percentages remain essentially unchanged for the non-duplicated analysis. Especially because zero represents a floor on the number of minutes of a category of programming that a station can offer, Dr. Crawford's failure to control for the presence of a non-trivial number of zeros has the potential to skew the marginal coefficients that are being estimated.

To account for the presence of zeros, I included indicator variables for instances where the distant minute variables are equal to zero, and then re-estimated the two models, while keeping the log-transformation of the lagged number of subscribers (**Exhibits R2 and R3**, Model 1) and the log-transformed distant subscriber instances in the models (**Exhibits R2 and R3**, Model 2). Relative to Dr. Crawford's model (**Exhibits R2 and R3**, Model 0), adding the indicators for instances with zero distant minutes increases the PS and PTV shares by approximately 6 percentage points and 1-2 percentage points, respectively. The Devotional share increases by approximately 1 percentage point while the CTV share decreases by approximately 10 percentage points. The JS share increases by approximately 1 percentage point, and the Canadian share decreases by approximately 0.4-0.5 percentage points. Model 3 in **Exhibits R2 and R3** presents the estimated royalty shares when the zero distant minute indicators are added to the models.

Next, I evaluated the sensitivity of Dr. Crawford's model to including the lagged number of permitted DSEs in the two models. In his testimony, Dr. Crawford discusses the economics of distant signal carriage. He mentions that the incremental cost of distant signal carriage depends on the DSE-type of each signal. Additionally, the royalty formula relies on the number of DSEs

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as input for the royalty calculation. For both the initial and the non-duplicated analyses, the shares remain approximately the same compared to the model without this variable (Model 3). Model 4 in **Exhibits R2 and R3** presents the regression results and estimated royalty shares when the lagged number of permitted DSEs is added to the models.

In his non-duplicated model, Dr. Crawford includes an additional variable (the total number of non-duplicated minutes), which was not used in the initial model. In footnote 57 of his testimony, he explains that “For the final econometric model that accounts for duplicate network program minutes, I include as a covariate the total number of non-duplicated minutes. This new covariate plays the same role in the final econometric model that the number of distant signals plays in the initial econometric model.” However, in the non-duplicated model the number of distant signals is still included, together with the new variable (the total number of non-duplicated minutes). The correlation between the two variables is 0.998, so they are in fact almost perfectly correlated, which makes the rationale for including that additional variable even less clear. As an additional sensitivity, I reran the non-duplicated model without the total non-duplicated minutes variable. Model 5 in **Exhibit R3** presents regression results and estimated royalty shares from this analysis. Compared to Model 4 in **Exhibit R3**, excluding the added variable decreases the PS share by approximately 0.2 percentage points, the JS share increases by about 2 percentage points, while the CTV share drops by about 2 percentage points. The PTV share decreases by about 0.3 percentage points, while the Devotional and Canadian shares remain approximately the same.

As a final analysis, I included an indicator variable for the presence of WGNA. The addition of the variable increases the share of PS by approximately 2 percentage points, the share of CTV and PTV increases by approximately 1 percentage point, and the share of JS drops by

about 4 percentage points. The shares of the Devotional and Canadian categories increase by 0.1 and 0.3 percentage points, respectively. Model 5 in **Exhibit R2** and Model 6 in **Exhibit R3** presents the result of this sensitivity run.<sup>17</sup>

#### 4. Conclusions Regarding Dr. Crawford's Model.

Because Dr. Crawford's regression model does not measure value, contains deep embedded flaws that introduce sensitivity to data processing, and is highly sensitive to minor changes in included variables, including changes that improve statistical fit, I conclude that it is not a useful or reliable model.

#### C. Dr. George's Model

The Canadian group's expert, Dr. Lisa George, discusses profit maximizing CSOs and "revealed prevalence." CSOs' decisions to carry certain signals may indicate that they expect to benefit financially from doing so (profits exceeding fees paid). However, it still does not change the fact that what they would have paid in a free market would have been a different dollar amount than the fees we observe under the existing system. Dr. George later agrees that in an unregulated market, CSOs and stations would negotiate different prices for distant signals.<sup>18</sup> As she explains later in her report, the only information we can gather from observed data is that incremental benefits are higher than incremental costs (which may include royalty fees, but are not equal to royalty fees).<sup>19</sup>

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<sup>17</sup> In the analyses of Dr. Israel's model, I demonstrated the sensitivity of the Waldfogel-type regression model and the implied royalty allocation shares with respect to outliers, the inclusion of an additional measure of size (distant subscriber instances), as well as the addition of various transformations of model variables. Dr. Israel's model and implied royalty shares were extremely sensitive to all of the above. Because of the larger sample, Dr. Crawford's model does not exhibit sensitivity to outliers.

<sup>18</sup> *In the Matter of Distribution of the 2010-2013 Cable Royalty Funds*, Written Direct Statement of Lisa George at 8-9.

<sup>19</sup> *In the Matter of Distribution of the 2010-2013 Cable Royalty Funds*, Written Direct Statement of Lisa George at 20.



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Dr. George presents another Waldfoegel-type regression model, focused specifically on distant retransmissions within the Canadian region, rather than the entire U.S.<sup>20</sup> As she explains in her testimony, the choice to focus on the Canadian region was motivated by a desire to “increase the accuracy and precision of coefficient estimates.”<sup>21</sup> Moreover, systems outside the Canadian region are prohibited from retransmitting Canadian stations.

Unlike the other experts relying on Waldfoegel-type regressions, Dr. George uses an indirect approach for her analysis, in which she estimates the marginal “values” per minute, and then applies these marginal values to a combination of actual compensable minutes (for Canadian signals) and estimated compensable minutes (for U.S. signals). The indirect approach is likely less precise, but is necessitated by the fact that Dr. George does not have programming information for U.S. distant signals. To estimate the number of compensable distant minutes on U.S. signals, she relies on Dr. Crawford’s results, which are based on all U.S. distant signals, not just those within the Canadian region. As such, she has made an assumption that compensable shares from Dr. Crawford’s testimony are comparable to the compensable shares within the Canadian region, without supporting that assumption.

In her analysis, Dr. George makes another material but unsubstantiated assumption, that all stations broadcast the same number of hours throughout the day. This assumption seems to contradict the actual data from the Canadian Claimant’s expert Danielle Boudreau used in Dr. George’s analysis. A review of Exhibit-CCG-1-D in the corrected Canadian testimony, shows

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<sup>20</sup> The Canadian Region is slightly larger than the Canadian Zone, because Dr. George also includes U.S. systems absorbed into the zone as part of mergers.

<sup>21</sup> *In the Matter of Distribution of the 2010-2013 Cable Royalty Funds*, Corrections to the Amendment and to the Direct Case of the Canadian Claimants, Corrected Amendment to the Written Direct Statement of Lisa M. George (May 17, 2017), at 1.

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that there is variation in the total broadcast hours, at least within the Canadian region (see footnote 14 for a description of the Canadian region).

The focus on the Canadian region manifests itself in Dr. George's regression results as well, in that one of the coefficients for the distant minute variables is negative. Dr. George explains the finding as follows: "the negative coefficient for Program Supplier minutes suggests that on Canadian distant signals, Program Supplier content is a close substitute for other cable system offerings from the standpoint of viewers. In other words, the presence of Program Supplier programming on Canadian distant signals does not allow cable systems to charge higher prices for signal bundles, or to attract and retain subscribers." The substitution effect Dr. George alludes to is likely only part of the reason for the negative coefficient. What is also relevant to note is that the Canadian region is just part of the decision making domain of U.S. cable operators. Any analysis on just that region likely does not factor in the complex decision making process of U.S. cable operators, who are maximizing overall profits across all regions combined.

I evaluated the sensitivity of Dr. George's results to several changes to her model. As a start, I separated the PS and Devotional distant minutes that were combined in Dr. George's model and estimated the regression model. In the updated model (Model 1), the coefficient for PS distant minutes is statistically insignificant and the coefficient for JS distant minutes is positive, but statistically insignificant. The coefficient for the Devotional category is positive and statistically significant. Moreover, the magnitude of the coefficient for Devotional distant minutes (3,986.3) is significantly larger than the coefficient for Canadian distant minutes (120.5). The coefficient for the Canadian distant minutes is larger than the counterpart in Dr. George's regression analysis (88.9). In a second analysis (Model 2), in addition to separating the Devotional and PS distant minutes, I control for the number of distant subscriber instances. In a

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third analysis (Model 3), I also control for instances with zero minutes by adding indicators for zero distant minutes for each claimant category. In these two models, the coefficient for the PS distant minutes continues to be negative and the coefficient for the JS distant minutes continues to be insignificant. With each model, the magnitudes of the coefficients for Canadian and Devotional distant minutes increase compared to earlier models.

In calculating the royalty shares, Dr. George multiplies the minute coefficients by the subscriber-weighted compensable distant minutes. The motivation for the weighting is unclear; neither Dr. Israel, nor Dr. Crawford weight the distant minutes when calculating their proposed royalty allocation shares. Conceptually, weighting by subscribers may not be appropriate in Waldfogel-type regressions which model the decisions of cable operators (i.e., decision to carry a signal or signals with minutes of different types of content in return for royalty payments implied by the formula). Also, the number of subscribers does not necessarily reflect value for any claimant category. Hence, in calculating the shares, I multiplied the coefficients for distant minutes with the (unweighted) compensable distant minutes, to better represent what Waldfogel-type regressions attempt to measure. Using unweighted compensable distant minutes instead of weighted only has a significant effect on the implied royalty shares for the Canadian and domestic distant signals categories. The share for the Canadian category increases significantly when calculated using the weighted compensable distant minutes instead of unweighted, while the share for the domestic distant signals category decreases significantly.

In Dr. George's testimony model, the coefficient for JS distant minutes is not statistically significant, implying that statistically the marginal effect of an additional JS distant minute is zero. Additionally, the coefficient for the combined PS and Devotional distant minutes is statistically significant, but negative. Dr. George makes an error and calculates the implied

royalty shares (in Table 3 of her testimony) using the negative coefficient for the PS and Devotional combined distant minutes and the statistically insignificant JS distant minutes.<sup>22</sup> It is not clear why Dr. George did not set the proposed PS and Devotional combined royalty share to zero, as Dr. Israel did when he had to deal with negative coefficients in his analysis. Hence, I set the “Regression Value Contribution” to zero for claimants that have negative and statistically insignificant coefficients. For the three regression models I estimated, royalty shares for Canadian claimants vary between 12 and 34 percent and royalty shares for Devotional claimants vary between 1.6 and 3.3 percent, as summarized in **Exhibit R4**.

Given that there exists Devotional content on Canadian stations, it is reasonable to argue that if Canadian claimants are allocated a share of the royalty fees based on another methodology, such as the Bortz or Horowitz surveys, a portion of the Canadian share should be carved out for Devotional content on Canadian stations. Based on the last regression I present that is built on Dr. George’s model (Model 3 in **Exhibit R4**), this share could be approximately 8.9 percent (3.3 divided by the sum of 3.3 and 34.2). However, I do not recommend the use of this analysis to determine royalty shares, because it contains all of the many flaws of other regression analyses presented, plus several more of its own.

#### **D. Dr. Gray’s Model**

Dr. Gray presented a different regression model, combining highly questionable measures of distant and local viewership, program content, and controls for broadcast time slot in 2010-2013. Specifically, Dr. Gray estimates a regression model in which the dependent variable is the distant viewership (for every combination of call sign, day, and quarter hour) and independent variables include local viewership and other control variables. After estimating this model, Dr.

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<sup>22</sup> Dr. George’s calculation produces counterintuitive results such as a negative royalty share for PS and Devotional combined minutes (negative 14.2 percent).

Gray predicted distant viewership and used these predictions to propose viewership-based royalty allocation shares.

I have already discussed why viewership is not an appropriate measure of relative market value in the context of comparing different categories of programming that are expected to appeal to different market groups. My testimony here will therefore focus on why Dr. Gray's analysis is not based on a reliable measure of viewership and why Dr. Gray's regression approach does not tell much about value.

**1. Dr. Gray Renders His Data Source Unusable by Superimposing Incompatible Sampling Methodologies.**

Among the many significant limitations of Dr. Gray's approach is that his data source is practically unusable, principally due to his choice to superimpose a random station sample on top of Nielsen national meter data that was itself the product of a tiered sample of geographical areas. The result is a dataset that almost certainly omits or under samples certain geographical areas in which sample stations are broadcast or retransmitted, and that necessarily either misapplies or fails to apply sample weights. In short, no reliable conclusions can be drawn on the basis of the sample that Dr. Gray uses.

As detailed by Paul Lindstrom, the starting point for Dr. Gray's analysis is Nielsen National Meter Data<sup>23</sup> and the details of the sampling methodology are discussed in detail in the Nielsen Reference Supplements for 2010-2011, 2011-2012, 2012-2013 from the Nielsen

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<sup>23</sup> See *Distribution of the 2010, 2011, 2012, and 2013 Cable Royalty Funds*, Written Direct Statement Regarding Allocation Methodologies of Program Suppliers, Volume I, Testimony of Paul B. Lindstrom (Dec. 22, 2016). As explained by Mr. Lindstrom, meters are attached to TVs in sampled households to detect the channel that is being viewed. Household meter data is collected year-round in Nielsen's metered markets.

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Company.<sup>24</sup> The sampling methodology by which this data was collected was designed for the purpose of measuring viewership of nationally televised programs, not of individual stations.

Because its focus is on viewership of programs, and not stations, Nielsen uses a sampling approach that is geographically oriented. [REDACTED]

[REDACTED] Hence, Nielsen's Meter methodology does not collect data from every geography in the U.S. In other words, geographical areas that are sampled are assumed to be representative of other geographical areas. This approach may make sense when seeking to measure viewership of nationally televised programs, but makes little sense when seeking to measure viewership of particular stations, which are locally broadcast or retransmitted only in certain geographical areas.

From this starting point, Dr. Gray requested Nielsen to cull the data down to observations of viewership on a randomly selected list of stations. If Nielsen's sampling methodology had been truly nationwide, instead of randomized by geographical area, Dr. Gray's approach might have made some sense. But Dr. Gray ignores Nielsen's geographical sampling scheme. There is no guarantee that the stations in Dr. Gray's sample were broadcast or retransmitted in the counties and geographic areas sampled by Nielsen. Local or distant viewership would be underreported or completely missing if geographies where a particular station is retransmitted are not sampled by Nielsen.

To illustrate by example, viewership in a rural Colorado county might be fairly representative of viewership in a rural Utah county when seeking to measure viewership of a nationally broadcast program, like the Super Bowl, for instance. But viewership in a rural

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<sup>24</sup> See Rebuttal Testimony of John Sanders, Sep. 15, 2017, at App. D (The Nielsen Company, *National Reference Supplement* 2010-2011, 2011-2012, 2012-2013).

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Colorado county would not be representative of a rural Utah county when seeking to measure local viewership of a local Utah station, or distant viewership of a station retransmitted in the Utah county. Geographically limited samples cannot be combined the way Dr. Gray has combined them.

[REDACTED]

[REDACTED]

[REDACTED] Moreover, the lack of coverage is not randomly distributed, because the sample design disproportionately oversamples from urban areas, such as Los Angeles, New York, Chicago, Philadelphia, and San Francisco. These geographical areas are self-representing in Nielsen's stratified random sample. Although Nielsen presumably adjusts for the stratified sample by applying appropriate sample weights for the purpose of its national audience measurements, a very sophisticated geography-based analysis would be required to calculate sample weights on a station-by-station basis. For example, one would need to know the total television population and the number of meters within the broadcast range of each of the sampled stations. Neither Nielsen nor Dr. Gray has even purported to have undertaken such an analysis.

On top of the flaws in Dr. Gray's sampling approach, Nielsen Meter Data is inherently less reliable than Nielsen Diary Data for the granular market-level understanding that Dr. Gray's approach seeks to achieve. The meters are simply too sparse nationwide, and are even more sparse (or non-existent) in certain geographical areas. Because the sample design had nothing to do with measuring viewing patterns in distant markets, including many rural areas where signals may be retransmitted, it would be surprising to find measurable amounts of distant viewing in

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<sup>25</sup> The Nielsen Company, *National Reference Supplement* 2010-2011, 2011-2012, 2012-2013.

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Dr. Gray's data. [REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] Because I do not have access to the population and sample data used by Nielsen, I am unable to test whether this sample size would be sufficient for any given population. But a mere 9 meters (or fewer, especially in rural areas due to the Nielsen sampling methodology), each one measuring viewership (or not) on a single television set capable of viewing only one out of dozens or hundreds of possible channels at a time, seems unlikely to constitute a sufficient sample size within any particular geographical area, especially for distantly retransmitted stations. A sample size of zero in a market would, of course, be insufficient in any event.

Remarkably, Program Suppliers have admitted that their expert witnesses did not even consider the geographical limitations on Nielsen's sampling methodology. Email communications from counsel for PS confirmed that Dr. Gray did not consider the sampling methodology for the Nielsen Meter data:<sup>26</sup>

[N]one of our witnesses considered or relied on documents identifying Nielsen metered markets, or addressing "how Nielsen decided which markets to meter" in connection with this proceeding. ... To be clear, none of Program Suppliers' witnesses relied on or considered the Nielsen National Reference Supplement publications in connection with their testimony in this proceeding ...

Program Suppliers' witnesses did not rely on or consider the Nielsen National Reference Supplements in preparing their testimony for this proceeding.

The failure to consider the underlying sampling methodology, and the effect of superimposing a station sample, is itself a serious defect in Dr. Gray's process.

<sup>26</sup>

*See* Rebuttal Testimony of John Sanders, Sep. 15, 2017, at App. C



In addition to these fundamental problems, Paul Lindstrom also explains that the viewership data provided to Dr. Gray excludes non-compensable distant programming. Unlike other experts in this proceeding, neither Mr. Lindstrom nor Dr. Gray provided the details of the methodology for determining which broadcasts are compensable and which ones are not. Without supporting data or code (or even a description of the approach), I cannot evaluate the appropriateness of the methodology or review how Mr. Lindstrom identified compensable and non-compensable viewing.<sup>27</sup>

**2. Dr. Gray Improperly Implies Values to Missing Data Points, Dramatically Increasing the Number of Zeros in His Already Sparse Dataset.**

Dr. Gray presents two measures for royalty shares, one that is purely based on retransmitted distant minutes which Dr. Gray calls volume-based (Table 1 of Dr. Gray's testimony) and one that is based on predicted viewership from his model (Table 2 of Dr. Gray's testimony). According to Dr. Gray, volume-based shares are an imperfect measure, since they reflect retransmissions, but not viewership. Unlike the volume-based shares which are directly observable for all cable operators and all subscribers, distant viewership-based shares are not directly observable except insofar as they can be measured for a sample of stations and subscribers, as reported in the Nielsen data.

Because Dr. Gray's data is based on a sample and is at the quarterhour-level, the data is very "sparse" in the sense that there are many observations in Dr. Gray's data with zero viewing (especially distant viewing). Dr. Gray acknowledges the low frequency of distant viewership observations in the Nielsen Meter Data.<sup>28</sup>

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<sup>27</sup> In my testimony as part of the SDC's Amended Written Direct Statement at pages 6-9 and Exhibits 4-6, I pointed to errors in calculating compensable content on WGN America.

<sup>28</sup> *Distribution of the 2010, 2011, 2012, and 2013 Cable Royalty Funds*, Amended and Corrected Written Direct Statement Regarding Allocation Methodologies of Program Suppliers, Testimony of Jeffrey S. Gray, Ph.D. (amended Mar. 9, 2017) at 17.

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Paul Lindstrom, the Nielsen expert, discusses the compensable distant viewership data in his testimony in more detail:

As I testified previously, the appearance of these “zero viewing” instances is consistent with what I would expect to find in a custom analysis of viewing to distant signals by cable subscribers for at least two reasons. First, it is important to recognize that Dr. Gray’s analysis excluded all distant viewing to programs that are not compensable in this proceeding. This included programs that were not simultaneously broadcast on both WGN’s local feed and WGN’s satellite feed (known as WGN-A). Where noncompensable programs aired, Nielsen’s custom analysis properly reported a zero viewing value. Second, the amount of actual viewing minutes to certain distant signals is very small. Where the viewing minutes to particular distant signal programs were so small, Nielsen’s custom analysis would assign a zero viewing value. Notwithstanding these zero viewing instances, reliable estimates of viewing may be drawn from the aggregate data.<sup>29</sup>

In other words, only the aggregate Nielsen data can be reliable since there may be little or no compensable distant viewing at the quarterhour-level, implying that an analysis at the quarterhour-level is subject to a high degree of imprecision and lack of reliability. Dr. Gray instead performs his analysis on the number of households watching distant content on a station on a given day and quarterhour, and then aggregates the results to calculate the viewership-based shares. These share allocations are not reliable.

Given the small amount of compensable distant viewership in the Nielsen data, it is not surprising that more than 92 percent of the records in Dr. Gray’s analysis data have a value of zero for the dependent variable in the regression analysis. There are three separate reasons for these zero compensable distant viewing. As explained by Paul Lindstrom, some of the zeros are true zeros, others are instances with “very small” compensable distant viewing, and those are coded as zeros in the Nielsen data. Unfortunately, the Nielsen meter data Dr. Gray is provided with does not distinguish between the two types of zeros. In my view, this is an important

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<sup>29</sup> *In the Matter of Distribution of the 2004, 2005, 2006, 2007, 2008 and 2009 Cable Royalty Funds*, Written Direct Case of the MPAA-Represented Program Suppliers, Volume II, Direct Testimony of Paul Lindstrom at 5.

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limitation of the data as coding instances with very small distant viewing as zeros has the potential to significantly bias the results of any analysis relying on that data.

Even more importantly, the third reason for having zero distant viewing in Dr. Gray's analysis is that there were many instances in which Dr. Gray's Gracenote data containing program titles had no corresponding match in the Nielsen data. For example, 63.5 percent of the Gracenote data in 2013 has no corresponding match in the Nielsen data as shown in **Exhibit R5**. In other words, there simply was no Nielsen data for certain stations or for certain periods of time.

Instead of excluding these records from his regression model, Dr. Gray instead imputes zeros to approximately 70 percent (**Exhibit R6**) of the quarterhours for which there was no Nielsen data (**Exhibit R5**).<sup>30</sup> The remaining approximately 30 percent are instances where Dr. Gray imputes local viewing but not distant viewing. In other words, Dr. Gray assumed that the absence of Nielsen data was itself an indication of zero viewing, even though it could just as easily been the result of not having any meters, or a sufficient number of meters, in the geographical areas in which the stations were broadcast or retransmitted, or because Nielsen incorrectly excluded the viewing as non-compensable, or for other reasons. These records are not used in the estimation of Dr. Gray's regression coefficients, but are later used in the share calculation since Dr. Gray predicts distant viewership based on imputed values. As summarized in **Exhibit R7**, the proportion of Gracenote records unmatched to Nielsen (by claimant group and year) is very uneven across claimant groups. The highest are for the Canadian and Devotional categories, possibly due to underrepresentation in rural areas, including, for example,

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<sup>30</sup> Dr. Gray imputes zeros at the call sign level. Specifically, if there is at least one record from the Gracenote data that matches to the Nielsen data for particular call sign in a given year, then both local and distant viewing for all unmatched records for that call sign are imputed as zero. Dr. Gray does not provide a rationale for the specific imputation methodology used.

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the Bible-belt South, and much of the Canadian region. The proportion of unmatched records is between 85 percent and 95 percent for the Canadian category, followed by the Devotional category with an imputation rate between 79 percent and 85 percent, with relatively little variation by year. In other words, a very significant proportion of aired content cannot be matched to the Nielsen data for these two claimant groups, and as a result they are either imputed or not used in the data underlying the regression model.

Given the proportion of imputed zero distant viewing instances in Dr. Gray's data, I would expect that they significantly impact his analysis and results. Since these imputed zeros in the dependent variable are used in the estimation of the regression model, they effectively reduce the prevalence of distant viewership in Dr. Gray's regression data, and the impact is likely to be larger for claimant categories with smaller distant viewership than for claimant categories with larger distant viewership. Adding these imputed zeros is similar to adding noise or imprecision to the underlying data that (based on Paul Lindstrom's testimony referenced above), already has a high-level of error at the individual record level.

To evaluate the impact of these imputations, I reran Dr. Gray's analysis excluding the imputed distant minutes from the regression analysis, but then using the predicted values from the model for those records in the share calculations. **Exhibit R8** presents the results of these alternative model runs. In these alternative model runs, the shares of the three categories with the lowest observed distant viewership (Canadian, Devotional, and JS) are consistently impacted the most by the imputation of zeros. In the alternative models, the overall amount of predicted distant viewing is almost double the amount in the original Dr. Gray model. This result is not surprising. With the removal of imputed zeros, the prevalence of distant viewing in the Nielsen data is higher, and hence the magnitude of predicted distant viewing is higher. The Devotional

share under the alternative model consistently increases across the four years from the 1.1-2.4 percent range to the 1.9-3.9 percent range, while the Canadian and JS shares consistently decrease.

**3. Missing Gracenote Data May Further Undermine the Representativeness of Dr. Gray's Station Sample.**

In the process of matching the Nielsen data to the Gracenote data, Dr. Gray also has to deal with instances where records in the Nielsen data have no corresponding Gracenote matches. The number of sample stations that do not appear in the Gracenote data ranges from 5 to 8 per year. The number of stations in the initially random sample, less any of the sampled stations without Gracenote data, is reduced even further when Dr. Gray merges the remaining sample with the Nielsen data. The number of sampled stations dropped from this second merge ranges between 19 and 26 depending on the year. After these additional exclusions, Dr. Gray's sample is reduced to between 120 and 127 stations. That is to say, between 17 percent and 21 percent of the initially sampled stations do not make it into the analysis due to the need to combine data from various sources. **Exhibit R9** shows the number of stations dropped from the initial sample due to lack of Gracenote and Nielsen data in each year.

Depending on the year, as shown in **Exhibit R5**, approximately 18-27 percent of the records in Dr. Gray's sample (augmented with the Nielsen data) do not match to the Gracenote data. Dr. Gray excludes these records from his analysis. Since the excluded records have no corresponding Gracenote data, I cannot evaluate what claimant categories they represent, or the proportion of exclusions by claimant category. I did, however, analyze the proportion of records with positive distant viewership that are excluded. These are stations that Dr. Gray sampled and for which he received the Nielsen Meter Data, but did not have the corresponding Gracenote data. That analysis (**Exhibit R10, first panel**) shows that the percentage of excluded records

with positive distant viewership ranges between 16 and 22 percent for 2010 through 2012, and is about 11 percent for 2013, thus further reducing the amount of distant viewing in Dr. Gray's analysis sample. I also analyzed the proportion of records with zero distant viewership excluded from Dr. Gray's sample (**Exhibit R10, second panel**). For 2010-2013, that proportion ranges from 19 to 28 percent, and is generally higher compared to the proportion of excluded records with positive distant viewership. As a result, Dr. Gray excludes a disproportionately higher proportion of zero viewing instances, compared to positive viewing instances (overall for 2010-2013, he excludes 17 percent of records with positive distant viewership and 24 percent of records with zero distant viewership), which additionally skews the data underlying his analysis.

All these exclusions of records and stations from Dr. Gray's regression data put in serious question whether the final sample used for the regression analysis continues to be representative of the underlying population, and ultimately the reliability of the overall analysis.

#### **4. Dr. Gray's Predicted Results Do Not Fit the Data on Which He Relies.**

In addition to all of these material data limitations and analysis flaws, Dr. Gray's model also fits the data very poorly. If the model results are to be relied upon, one would at least expect that the compensable distant viewing from his model should compare reasonably well with the actual compensable distant viewing from Nielsen. Such an evaluation can be made by comparing the actual dependent variable to the prediction from Dr. Gray's model. If the model fits the data well, the expectation is that predictions from the model would be close to the actual distant minutes. On the other hand, if the model fit is poor, the predicted values would differ in a material way from the actual data observed. **Exhibit R11** presents the comparisons separately by year and separately for positive and zero compensable distant viewing instances in the Nielsen data. I limited the comparison to only instances in the Nielsen data, since I do not have observed distant viewing for Dr. Gray's imputed zero compensable distant viewing instances.

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Overall for each of the four years, Dr. Gray's model under-predicts compensable distant viewing observed in the Nielsen data by between 29 percent and 34 percent, which in itself is an indication of the poor model fit and the unreliability of the predicted distant viewership from the model. Within the individual claimant groups, the model under-predicts actual data by between 68 percent and 98 percent. In other words, for the individual categories, Dr. Gray's model predicts compensable distant viewership that is between 68 percent and 98 percent lower than the actual values observed in the Nielsen data, for instances when Nielsen reports positive compensable distant viewing. The under-prediction percentages are fairly stable across the years, with the Devotional compensable distant viewing being consistently the category with the largest under-prediction.

### **5. Conclusions Regarding Dr. Gray's Model.**

In my view, Dr. Gray's model and data are so materially flawed as to be completely unreliable for the reasons outlined above. His viewership-based royalty shares are calculated from a poor model, with an unusable dataset. The resulting predictions from that model significantly deviate from the observed values, thus further suggesting an unreliable model and implied shares.

## **V. Conclusions**

Overall, as noted previously in my earlier testimony, none of the regressions presented say much of anything about relative market value. At most, they might be marginally informative to corroborate more reliable value-based information, such as the Bortz and Horowitz surveys which were designed to measure relative market value directly. In the application of any regression analyses, the Judges should be alert to the fact that such analyses are highly sensitive to included variables as well as the transformations used for those variables, that there are very significant limitations or flaws with the datasets used, and that each of the regressions presented

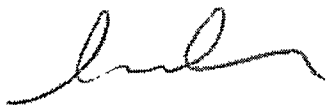
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contains fundamental errors in design. There is not a single regression model that can reliably provide the information the Judges are seeking in this proceeding, as can be seen from models provided by multiple experts. Some “modified” Waldfoegel-type regressions, such as the ones I present in this testimony and in my amended direct testimony, might be more defensible in theory and show substantially better statistical fit, but they are not very robust empirically, and likely have little or nothing to do with relative market value.

**VI. Declaration of Erkan Erdem**

I declare under penalty of perjury that the foregoing testimony is true and correct, and of my personal knowledge.

Executed on September 15, 2017



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Erkan Erdem, Ph.D.



**Exhibit R1. Adjusted R-Squared from Regression Analysis**

<b>Model Description</b>	<b>Adjusted R-Squared</b>
Model A: Initial Analysis With Only Distant Minute Variables	0.0192
Model B: Non-duplicated Analysis With Only Distant Minute Variables	0.0200
Model C: Initial Analysis Without Distant Minute Variables	0.2266
Model D: Dr. Crawford's Initial Analysis	0.2466
Model E: Non-duplicated Analysis Without Distant Minute Variables	0.2266
Model F: Dr. Crawford's Non-duplicated Analysis	0.2470

## Exhibit R2. Royalty Shares Based on Dr. Crawford's Initial Analysis

Model Description	Adjusted R-Squared	Year	Obs. Used for Share Calculations	PS	JS	CTV	PTV	Devotional	Canadian
Model 0: Dr. Crawford's Initial Analysis	0.2466	2010	6,267	28.58%	33.07%	17.29%	15.90%	1.09%	4.08%
		2011	6,676	26.54%	30.20%	17.91%	20.55%	0.77%	4.04%
		2012	6,546	23.91%	34.11%	17.32%	19.85%	0.59%	4.22%
		2013	6,637	21.29%	35.99%	16.13%	21.42%	0.55%	4.63%
		2010-2013	26,126	24.98%	33.39%	17.15%	19.49%	0.74%	4.25%
Model 1: Dr. Crawford's Initial Analysis with Transformation	0.9733	2010	6,267	30.14%	44.94%	5.97%	12.41%	2.72%	3.81%
		2011	6,676	28.87%	42.34%	6.38%	16.54%	1.98%	3.89%
		2012	6,546	25.61%	47.09%	6.08%	15.73%	1.49%	4.00%
		2013	6,637	22.60%	49.23%	5.61%	16.82%	1.39%	4.35%
		2010-2013	26,126	26.70%	45.99%	6.00%	15.41%	1.88%	4.02%
Model 2: Dr. Crawford's Initial Analysis with Transformation and Distant Subscriber Instances	0.9737	2010	6,267	30.67%	44.04%	6.12%	12.66%	2.73%	3.78%
		2011	6,676	29.35%	41.44%	6.53%	16.85%	1.98%	3.85%
		2012	6,546	26.08%	46.17%	6.23%	16.05%	1.50%	3.97%
		2013	6,637	23.04%	48.32%	5.76%	17.18%	1.39%	4.32%
		2010-2013	26,126	27.18%	45.08%	6.15%	15.72%	1.88%	3.99%
Model 3: Dr. Crawford's Initial Analysis with Transformation, Distant Subscriber Instances, and Zero Minute Indicators	0.9807	2010	6,267	34.77%	34.07%	7.52%	16.83%	3.19%	3.61%
		2011	6,676	32.69%	31.51%	7.89%	22.02%	2.28%	3.62%
		2012	6,546	29.61%	35.78%	7.67%	21.38%	1.75%	3.80%
		2013	6,637	26.33%	37.69%	7.13%	23.04%	1.64%	4.16%
		2010-2013	26,126	30.76%	34.82%	7.55%	20.87%	2.20%	3.80%
Model 4: Dr. Crawford's Initial Analysis with Transformation, Distant Subscriber Instances, Zero Minute Indicators, and Permitted DSEs	0.9808	2010	6,267	35.59%	33.07%	7.96%	16.42%	3.23%	3.74%
		2011	6,676	33.49%	30.60%	8.35%	21.50%	2.30%	3.75%
		2012	6,546	30.40%	34.82%	8.14%	20.92%	1.78%	3.95%
		2013	6,637	27.08%	36.75%	7.58%	22.58%	1.67%	4.34%
		2010-2013	26,126	31.55%	33.86%	8.00%	20.40%	2.23%	3.95%

Model Description	Adjusted R-Squared	Year	Obs. Used for Share Calculations	PS	JS	CTV	PTV	Devotional	Canadian
Model 5: Dr. Crawford's Initial Analysis with Transformation, Distant Subscriber Instances, Zero Minute Indicators, Permitted DSEs, and WGN Indicator	0.9809	2010	6,267	37.30%	29.57%	8.76%	17.03%	3.34%	4.00%
		2011	6,676	34.98%	27.27%	9.16%	22.22%	2.38%	4.00%
		2012	6,546	31.95%	31.23%	8.98%	21.76%	1.85%	4.24%
		2013	6,637	28.56%	33.07%	8.40%	23.57%	1.74%	4.66%
		<i>2010-2013</i>	<i>26,126</i>	<i>33.12%</i>	<i>30.33%</i>	<i>8.82%</i>	<i>21.19%</i>	<i>2.31%</i>	<i>4.23%</i>

## Exhibit R3. Royalty Shares Based on Dr. Crawford's Non-Duplicated Analysis

Model Description	Adjusted R-Squared	Year	Obs. Used for Share Calculations	PS	JS	CTV	PTV	Devotional	Canadian
Model 0: Dr. Crawford's Non-duplicated Analysis	0.2470	2010	6,267	28.52%	33.45%	17.54%	15.40%	1.05%	4.03%
		2011	6,676	26.42%	30.47%	18.12%	20.26%	0.74%	3.98%
		2012	6,546	23.94%	34.61%	17.65%	19.05%	0.57%	4.19%
		2013	6,637	21.44%	36.81%	16.57%	20.02%	0.53%	4.63%
		<b>2010-2013</b>	<b>26,126</b>	<b>25.00%</b>	<b>33.88%</b>	<b>17.46%</b>	<b>18.73%</b>	<b>0.72%</b>	<b>4.22%</b>
Model 1: Dr. Crawford's Non-duplicated Analysis with Transformation	0.9734	2010	6,267	30.10%	44.95%	6.30%	12.19%	2.69%	3.78%
		2011	6,676	28.75%	42.22%	6.71%	16.53%	1.95%	3.85%
		2012	6,546	25.64%	47.20%	6.43%	15.29%	1.46%	3.98%
		2013	6,637	22.72%	49.68%	5.98%	15.91%	1.36%	4.35%
		<b>2010-2013</b>	<b>26,126</b>	<b>26.71%</b>	<b>46.10%</b>	<b>6.35%</b>	<b>15.00%</b>	<b>1.85%</b>	<b>4.00%</b>
Model 2: Dr. Crawford's Non-duplicated Analysis with Transformation and Distant Subscriber Instances	0.9737	2010	6,267	30.62%	44.09%	6.43%	12.42%	2.69%	3.75%
		2011	6,676	29.21%	41.37%	6.84%	16.82%	1.95%	3.81%
		2012	6,546	26.09%	46.33%	6.57%	15.59%	1.47%	3.95%
		2013	6,637	23.15%	48.81%	6.11%	16.23%	1.37%	4.33%
		<b>2010-2013</b>	<b>26,126</b>	<b>27.18%</b>	<b>45.23%</b>	<b>6.48%</b>	<b>15.29%</b>	<b>1.85%</b>	<b>3.97%</b>
Model 3: Dr. Crawford's Non-duplicated Analysis with Transformation, Distant Subscriber Instances, and Zero Minute Indicators	0.9807	2010	6,267	34.73%	34.20%	7.86%	16.55%	3.17%	3.50%
		2011	6,676	32.54%	31.51%	8.21%	22.01%	2.25%	3.49%
		2012	6,546	29.68%	36.02%	8.05%	20.83%	1.73%	3.70%
		2013	6,637	26.56%	38.29%	7.55%	21.88%	1.63%	4.08%
		<b>2010-2013</b>	<b>26,126</b>	<b>30.81%</b>	<b>35.05%</b>	<b>7.92%</b>	<b>20.35%</b>	<b>2.18%</b>	<b>3.70%</b>
Model 4: Dr. Crawford's Non-duplicated Analysis with Transformation, Distant Subscriber Instances, Zero Minute Indicators, and Permitted DSEs	0.9809	2010	6,267	35.58%	33.14%	8.32%	16.16%	3.21%	3.59%
		2011	6,676	33.36%	30.56%	8.70%	21.51%	2.28%	3.59%
		2012	6,546	30.48%	35.01%	8.54%	20.40%	1.76%	3.81%
		2013	6,637	27.34%	37.29%	8.03%	21.47%	1.65%	4.22%
		<b>2010-2013</b>	<b>26,126</b>	<b>31.62%</b>	<b>34.05%</b>	<b>8.40%</b>	<b>19.92%</b>	<b>2.21%</b>	<b>3.81%</b>

Model Description	Adjusted R-Squared	Year	Obs. Used for Share Calculations	PS	JS	CTV	PTV	Devotional	Canadian
Model 5: Dr. Crawford's Non-duplicated Analysis with Transformation, Distant Subscriber Instances, Zero Minute Indicators, Permitted DSEs, and Excluding Total Number of Non-duplicated Minutes	0.9807	2010	6,267	35.39%	35.09%	6.79%	15.90%	3.24%	3.59%
		2011	6,676	33.28%	32.45%	7.12%	21.23%	2.31%	3.60%
		2012	6,546	30.32%	37.06%	6.97%	20.07%	1.77%	3.81%
		2013	6,637	27.13%	39.38%	6.54%	21.08%	1.67%	4.21%
		<i>2010-2013</i>	<i>26,126</i>	<i>31.46%</i>	<i>36.04%</i>	<i>6.85%</i>	<i>19.61%</i>	<i>2.23%</i>	<i>3.81%</i>
Model 6: Dr. Crawford's Non-duplicated Analysis with Transformation, Distant Subscriber Instances, Zero Minute Indicators, Permitted DSEs, Excluding Total Number of Non-duplicated Minutes, and WGN Indicator	0.9808	2010	6,267	37.15%	31.53%	7.57%	16.51%	3.36%	3.88%
		2011	6,676	34.81%	29.06%	7.91%	21.96%	2.39%	3.88%
		2012	6,546	31.92%	33.41%	7.79%	20.90%	1.85%	4.13%
		2013	6,637	28.67%	35.64%	7.34%	22.03%	1.74%	4.58%
		<i>2010-2013</i>	<i>26,126</i>	<i>33.07%</i>	<i>32.45%</i>	<i>7.65%</i>	<i>20.38%</i>	<i>2.32%</i>	<i>4.12%</i>

**Exhibit R4. Royalty Shares Based on Dr. George's Analysis**

Model Description	R-Squared	Adjusted R-Squared	PS & Devotional	PS	JS	Devotional	Canadian	U.S.
Model 0: Dr. George's Analysis	0.8600		-14.22%		10.15%		25.40%	78.68%
Model 1: Dr. George's Analysis with PS and SDC Separated	0.8614	0.8598		0.00%	0.00%	1.62%	12.13%	86.26%
Model 2: Dr. George's Regression with PS and SDC Separated and Distant Subscriber Instances	0.8880	0.8867		0.00%	0.00%	2.72%	21.82%	75.46%
Model 3: Dr. George's Regression with PS and SDC Separated, Distant Subscriber Instances, and Zero Minute Indicators	0.8896	0.8881		0.00%	0.00%	3.33%	34.19%	62.47%

## Exhibit R5. Nielsen Data and Gracenote Data Merge

Year	Nielsen Records with no Matching Gracenote Records	Gracenote Records with no Matching Nielsen Records	Gracenote Records Matched to Nielsen Records	Percent of Nielsen Records Not In Gracenote Records, Out of Total Nielsen Records	Percent of Gracenote Records Not In Nielsen Records, Out of Total Gracenote Records
	A	B	C	$D=A/(A+C)$	$E=B/(B+C)$
2010	592,320	2,396,974	1,821,133	24.5%	56.8%
2011	514,902	2,547,117	1,856,174	21.7%	57.8%
2012	600,514	2,617,530	1,652,056	26.7%	61.3%
2013	365,425	2,870,647	1,653,305	18.1%	63.5%
<b>2010-2013</b>	<b>2,073,161</b>	<b>10,432,268</b>	<b>6,982,668</b>	<b>22.9%</b>	<b>59.9%</b>

## Exhibit R6. Imputation Rates from Nielsen Data and Gracenote Data Merge

Year	Gracenote Records with no Matching Nielsen Records	Number of Unmatched Records, with Distant and Local Viewership Imputed as Zero	Imputed Zeros, as a Percentage of Total Unmatched	Number of Unmatched Records, with Local Rating Imputed at the Mean	Imputed Local Ratings, as a Percentage of Total Unmatched
	A	B	$C=B/A$	D	$E=D/A$
2010	2,396,974	1,790,734	74.7%	606,112	25.3%
2011	2,547,117	1,812,993	71.2%	722,769	28.4%
2012	2,617,530	1,889,602	72.2%	720,010	27.5%
2013	2,870,647	1,983,705	69.1%	878,069	30.6%
<b>2010-2013</b>	<b>10,432,268</b>	<b>7,477,034</b>	<b>71.7%</b>	<b>2,926,960</b>	<b>28.1%</b>

## Exhibit R7. Nielsen Data and Gracenote Data Merge, by Claimant Group

2010	Gracenote Records with no Matching Nielsen Records	Gracenote Records Matched to Nielsen Records	Unmatched Gracenote Records, as a Percentage of Total (Matched+Unmatched)
	A	B	$C=A/(A+B)$
Canadian	118,186	20,164	85.4%
CTV	217,836	327,153	40.0%
Devotional	176,741	39,467	81.7%
PS	966,464	886,592	52.2%
PTV	909,599	532,661	63.1%
JS	8,148	15,096	35.1%
<b>All Programs</b>	<b>2,396,974</b>	<b>1,821,133</b>	<b>56.8%</b>

2011	Gracenote Records with no Matching Nielsen Records	Gracenote Records Matched to Nielsen Records	Unmatched Gracenote Records, as a Percentage of Total (Matched+Unmatched)
	A	B	$C=A/(A+B)$
Canadian	175,805	8,547	95.4%
CTV	249,870	308,233	44.8%
Devotional	165,328	28,763	85.2%
PS	1,027,045	792,721	56.4%
PTV	919,182	702,503	56.7%
JS	9,887	15,407	39.1%
<b>All Programs</b>	<b>2,547,117</b>	<b>1,856,174</b>	<b>57.8%</b>



2012	Gracenote Records with no Matching Nielsen Records	Gracenote Records Matched to Nielsen Records	Unmatched Gracenote Records, as a Percentage of Total (Matched+Unmatched)
	A	B	$C=A/(A+B)$
Canadian	231,725	26,764	89.6%
CTV	315,245	313,580	50.1%
Devotional	75,576	20,377	78.8%
PS	760,882	604,489	55.7%
PTV	1,228,611	675,459	64.5%
JS	5,491	11,387	32.5%
<b>All Programs</b>	<b>2,617,530</b>	<b>1,652,056</b>	<b>61.3%</b>

2013	Gracenote Records with no Matching Nielsen Records	Gracenote Records Matched to Nielsen Records	Unmatched Gracenote Records, as a Percentage of Total (Matched+Unmatched)
	A	B	$C=A/(A+B)$
Canadian	232,417	21,674	91.5%
CTV	254,404	263,144	49.2%
Devotional	111,926	20,812	84.3%
PS	966,649	661,578	59.4%
PTV	1,294,904	671,335	65.9%
JS	10,347	14,762	41.2%
<b>All Programs</b>	<b>2,870,647</b>	<b>1,653,305</b>	<b>63.5%</b>

## Exhibit R8. Distant Viewership Shares: Impact of Imputed Zeros

2010	Predicted Distant Viewing (Based on Testimony Model)	Category Share of Total	Predicted Distant Viewing (Based on Model Build without Zero Imputations of Distant Viewing)	Category Share of Total	Percent Change in Category Share
Canadian	22,577	2.0%	31,708	1.5%	-25.2%
CTV	181,958	15.8%	325,843	15.1%	-4.6%
Devotional	13,598	1.2%	41,488	1.9%	62.6%
PS	585,521	50.9%	1,091,711	50.6%	-0.6%
PTV	321,335	28.0%	625,285	29.0%	3.7%
JS	24,466	2.1%	40,866	1.9%	-11.0%
<b>All Programs</b>	<b>1,149,455</b>	<b>100.0%</b>	<b>2,156,901</b>	<b>100.0%</b>	

2011	Predicted Distant Viewing (Based on Testimony Model)	Category Share of Total	Predicted Distant Viewing (Based on Model Build without Zero Imputations of Distant Viewing)	Category Share of Total	Percent Change in Category Share
Canadian	39,472	3.9%	64,167	3.3%	-16.2%
CTV	121,186	12.1%	228,961	11.7%	-2.6%
Devotional	24,497	2.4%	76,430	3.9%	60.8%
PS	501,580	49.9%	987,074	50.6%	1.4%
PTV	292,267	29.1%	549,459	28.2%	-3.1%
JS	25,803	2.6%	43,710	2.2%	-12.7%
<b>All Programs</b>	<b>1,004,805</b>	<b>100.0%</b>	<b>1,949,801</b>	<b>100.0%</b>	

2012	Predicted Distant Viewing (Based on Testimony Model)	Category Share of Total	Predicted Distant Viewing (Based on Model Build without Zero Imputations of Distant Viewing)	Category Share of Total	Percent Change in Category Share
Canadian	37,007	3.6%	59,956	2.4%	-33.3%
CTV	159,938	15.5%	380,298	15.2%	-2.1%
Devotional	11,032	1.1%	49,038	2.0%	83.0%
PS	373,643	36.2%	900,516	35.9%	-0.8%
PTV	430,093	41.6%	1,076,225	42.9%	3.0%
JS	21,266	2.1%	43,434	1.7%	-15.9%
<b>All Programs</b>	<b>1,032,979</b>	<b>100.0%</b>	<b>2,509,467</b>	<b>100.0%</b>	

2013	Predicted Distant Viewing (Based on Testimony Model)	Category Share of Total	Predicted Distant Viewing (Based on Model Build without Zero Imputations of Distant Viewing)	Category Share of Total	Percent Change in Category Share
Canadian	38,340	5.2%	61,777	3.8%	-26.2%
CTV	78,754	10.6%	171,808	10.6%	-0.1%
Devotional	8,160	1.1%	30,106	1.9%	69.0%
PS	334,733	45.1%	748,173	46.2%	2.4%
PTV	247,143	33.3%	566,332	34.9%	5.0%
JS	35,303	4.8%	42,468	2.6%	-44.9%
<b>All Programs</b>	<b>742,433</b>	<b>100.0%</b>	<b>1,620,664</b>	<b>100.0%</b>	

**Exhibit R9. Number of Sampled Stations Remaining After Data Merges**

Year	Initial Sample Size	Remaining Sample Size after Merge with Gracenote Data	Remaining Sample Size after Merge with Gracenote and Nielsen Data	Percent of Initial Sample Removed
	A	B	C	$D=1-C/A$
2010	153	145	126	18%
2011	153	148	127	17%
2012	152	146	124	18%
2013	151	146	120	21%

**Exhibit R10. Proportion of Unmatched Distant Viewing Records Excluded from the Analysis**

<b>Year</b>	<b>Gracenote Records with Positive Distant Viewing not Matched to Nielsen Records</b>	<b>Gracenote Records with Positive Distant Viewing Matched to Nielsen Records</b>	<b>All Records with Positive Distant Viewing in the Nielsen Records</b>	<b>Records with Positive Distant Viewing Excluded from Analysis, as a Percentage of Total</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D=A/C</b>
2010	82,279	289,055	371,334	22.2%
2011	49,369	256,469	305,838	16.1%
2012	55,258	267,984	323,242	17.1%
2013	25,357	213,773	239,130	10.6%
<b>2010-2013</b>	<b>212,263</b>	<b>1,027,281</b>	<b>1,239,544</b>	<b>17.1%</b>

<b>Year</b>	<b>Gracenote Records with Zero Distant Viewing not Matched to Nielsen Records</b>	<b>Gracenote Records with Zero Distant Viewing Matched to Nielsen Records</b>	<b>All Records with Zero Distant Viewing in the Nielsen Records</b>	<b>Records with Zero Distant Viewing Excluded from Analysis, as a Percentage of Total</b>
	<b>A</b>	<b>B</b>	<b>C</b>	<b>D=A/C</b>
2010	510,041	1,532,078	2,042,119	25.0%
2011	465,533	1,599,705	2,065,238	22.5%
2012	545,256	1,384,072	1,929,328	28.3%
2013	340,068	1,439,532	1,779,600	19.1%
<b>2010-2013</b>	<b>1,860,898</b>	<b>5,955,387</b>	<b>7,816,285</b>	<b>23.8%</b>

**Exhibit R11. Compensable Distant Viewership: Observed (from Nielsen) vs. Predicted (from Dr. Gray's Model)**

Claimant Group		2010			2011			2012			2013		
		<i>Actual</i>	<i>Predicted</i>	<i>% Difference</i>	<i>Actual</i>	<i>Predicted</i>	<i>% Difference</i>	<i>Actual</i>	<i>Predicted</i>	<i>% Difference</i>	<i>Actual</i>	<i>Predicted</i>	<i>% Difference</i>
Positive Compensable Distant Viewing	Canadian	28,292	9,068	-68%	12,325	3,994	-68%	18,697	3,357	-82%	11,339	3,210	-72%
	CTV	46,732	5,754	-88%	37,507	3,580	-90%	29,716	4,075	-86%	20,965	1,698	-92%
	Devotional	1,176	43	-96%	1,203	42	-96%	537	18	-97%	885	20	-98%
	PS	128,703	26,906	-79%	100,914	15,978	-84%	105,140	19,676	-81%	72,199	11,737	-84%
	PTV	151,508	27,355	-82%	153,713	20,969	-86%	158,206	24,297	-85%	141,345	19,587	-86%
	JS	6,666	1,418	-79%	6,990	1,319	-81%	7,408	2,257	-70%	8,364	2,323	-72%
<i>Subtotal</i>		<i>363,077</i>	<i>70,545</i>	<i>-81%</i>	<i>312,652</i>	<i>45,882</i>	<i>-85%</i>	<i>319,704</i>	<i>53,680</i>	<i>-83%</i>	<i>255,097</i>	<i>38,575</i>	<i>-85%</i>
Zero Compensable Distant Viewing	Canadian	0	293	-	0	142	-	0	2,532	-	0	2,220	-
	CTV	0	33,364	-	0	23,005	-	0	25,058	-	0	16,822	-
	Devotional	0	847	-	0	869	-	0	551	-	0	616	-
	PS	0	82,278	-	0	62,083	-	0	57,566	-	0	47,020	-
	PTV	0	62,825	-	0	75,792	-	0	67,954	-	0	58,076	-
	JS	0	7,778	-	0	6,394	-	0	5,157	-	0	6,072	-
<i>Subtotal</i>		<i>0</i>	<i>187,385</i>	<i>-</i>	<i>0</i>	<i>168,286</i>	<i>-</i>	<i>0</i>	<i>158,819</i>	<i>-</i>	<i>0</i>	<i>130,827</i>	<i>-</i>
<b>Overall</b>		<b>363,077</b>	<b>257,931</b>	<b>-29%</b>	<b>312,652</b>	<b>214,168</b>	<b>-31%</b>	<b>319,704</b>	<b>212,498</b>	<b>-34%</b>	<b>255,097</b>	<b>169,402</b>	<b>-34%</b>



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**Before the  
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The Library of Congress**

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In re  
DISTRIBUTION OF CABLE  
ROYALTY FUNDS

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)  
) **CONSOLIDATED PROCEEDING**  
) **NO. 14-CRB-0010-CD**  
) **(2010-13)**  
)  
)

**Rebuttal Testimony of John S. Sanders**

**September 15, 2017**



## **PUBLIC VERSION**

### **Testimony of John S. Sanders**

My name is John S. Sanders and I am testifying on behalf of the Settling Devotional Claimants ("SDC") in this proceeding. I have been requested to provide rebuttal testimony regarding the appropriate methodology for measuring the relative fair market value of certain categories of television programming that are re-broadcast on cable television systems outside of their home market areas. For the purposes of this analysis, "fair market value" is defined as the price in cash or cash equivalents that would convey between a willing buyer and a willing seller, both being fully informed and neither being under compulsion to buy or sell. Relative fair market value is a similar concept, but is expressed as a percentage rather than a dollar amount. The purpose of this analysis is to comment on amended direct testimony submitted on March 9, 2017, by the various parties to the Copyright Royalty Judges ("the Judges") in the Allocation Phase.

My initial direct testimony focused primarily on methodology. Because additional data was provided in the initial direct testimony of other claimants in these proceedings, I provided a more refined share calculation in my amended direct testimony dated March 9, 2017. The purpose of this testimony is to provide additional comments on the methodologies employed by the various claimants in this matter in their direct and amended direct testimony. My amended direct testimony also discusses many of my concerns, and is hereby incorporated by reference to avoid duplication.

I reserve the right to amend, modify and supplement this testimony based upon the availability of additional information.

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### **I. Professional Background - *Work and Education History***

Information on my professional background was included in my initial and amended direct testimony. An updated background statement is attached to this document, as well as a listing of any articles or speaking engagements that occurred since my amended direct testimony was prepared. This is included in Appendix A.

In July of 2017, I was elected to the Board of Directors of the Media Financial Management Association ("MFM"). The MFM is a non-profit professional organization dedicated primarily to providing continuing education on accounting, valuation, compliance, and related matters to managers and media financial executives. According to the MFM, its "1,200 active members represent the top financial, general management, IT, internal audit, human resources, and other media management personnel from major television networks, network affiliates, radio stations, cable programming networks, cable MVPDs, digital, out-of-home and newspaper/print outlets throughout the U.S. and Canada."<sup>1</sup>

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<sup>1</sup> <http://www.mediafinance.org/overview>.

## **II. Primary Materials Considered**

In addition to the materials referenced in my amended direct testimony, I have also reviewed the amended direct testimony submitted by the various parties to this Allocation proceeding, including the Canadian Claimants Group (“CCG”), the MPAA-represented Program Suppliers (“Program Suppliers”), the Public Television Claimants (“PTV”), on March 9, 2017, and the Corrected Written Direct Statement of Commercial Television (“CTV”) submitted on April 11, 2017, and related supporting documents that were produced in discovery. I have also reviewed the rebuttal testimony of Erkan Erdem, Ph.D.

## **III. Methodology for the Allocation Phase**

### **Direct and Amended Direct Testimony in the 2010-2013 Allocation Proceeding**

1. As indicated in my amended direct testimony, several studies were submitted by the parties in connection with the current proceedings. The results of these studies are summarized in Appendix B.<sup>2</sup> These studies endeavored to determine the fair market value of the program categories, while addressing certain weaknesses that were identified in the 2004-2005 case. The primary documents that yielded proposed allocations to the distant program categories included four studies that relied upon regression methodologies. These included the testimony of Jeffrey S. Gray, Ph.D., which was prepared on behalf of the Program Suppliers; that of Gregory Crawford, Ph.D., which was prepared on behalf of the CTV; that of Mark A. Israel, Ph.D., on behalf of the Joint Sports Claimants (“JSC”); and that of Lisa M. George, Ph.D., on behalf of the Canadian Claimants. Drs. Gray and George revised their share conclusions in connection with their amended direct testimony. PTV also submitted a

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<sup>2</sup> Appendix B is identical in layout to Appendix C in my amended direct testimony, but reflects revisions that were made in the amended direct testimony of Drs. Gray and George.

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revised claim of “of no less than 20.8 percent of the 2010-2013 Basic cable royalty funds (excluding music)” in connection with its amended direct testimony.

2. Two other studies relied upon surveys of executives with decision-making authority regarding programming at cable television systems. These were prepared by James M. Trautman of Bortz Media & Sports Group, Inc., on behalf of the JSC, and Howard Horowitz of Horowitz Research, Inc., on behalf of the Program Suppliers.
3. An additional regression analysis was performed on behalf of the Settling Devotional Claimants by Erkan Erdem, Ph.D. in his amended direct testimony in connection with his review of the studies listed above.
4. The results for Devotional Claimants of these seven studies are summarized in the following table:

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Devotional Allocations					
	2010	2011	2012	2013	Average
Bortz /Trautman Conclusion (Survey Methodology)	4.0%	4.5%	4.8%	5.0%	4.6%
Horowitz Conclusion (Survey Methodology) <sup>3</sup>	3.8%	5.9%	5.7%	3.5%	4.7%
Gray Conclusion (Regression Methodology - Amended) <sup>4</sup>	1.2%	2.4%	1.1%	1.1%	1.4%
Crawford Conclusion (Regression Methodology)	0.9%	0.6%	0.5%	0.4%	0.6%
Israel Conclusion (Regression Methodology) <sup>5</sup>	0.0%	0.0%	0.0%	n/a	0.0%
George Conclusion (Regression Methodology) <sup>6</sup>	n/a	n/a	n/a	n/a	n/a
Erdem Conclusion (Model 4B Regression Methodology) <sup>7</sup>	4.4%	3.6%	3.2%	n/a	3.8%

<sup>3</sup> The Horowitz Survey excludes programming on Canadian stations when categorizing Devotional programming: "Devotional programs such as shows with religious themes or religious talk shows broadcast on (INSERT STATIONS FROM LIST, BUT EXCLUDE PBS STATIONS [PBS = 1 IN COLUMN R] AND CANADIAN STATIONS [CANADIAN = 1 IN COLUMN S])." Because Devotional programming was transmitted on Canadian stations, such exclusion may bias the results against Devotional Claimants.

<sup>4</sup> The Gray initial direct testimony yielded 2010, 2011, 2012, and 2013 Devotional allocations of 0.6%, 1.0%, 0.5%, and 0.7% for the Devotional category, respectively, with a four-year average of 0.7%. These amounts increased by a factor of two in Dr. Gray's amended direct testimony, with an indicated four-year average of 1.4%.

<sup>5</sup> The Israel report compiled 2010-2012 data and yielded a single composite result. As such, this result has been inserted for all years for purposes of comparison.

<sup>6</sup> The George methodology consolidated all non-Canadian signal content into a single category of "US Distant Signals". As such, a specific allocation was not made for Devotional programming. However, the report appears to be in error because, while it endeavored to adjust for Joint Sports and Program Supplier content on Canadian distant signals, it did not do so for Devotional programming. As a point of fact, a number of Devotional programs, such as *Hour of Power*, *Joel Osteen*, and many others appear in the records of the Canadian Claimants. The George four-year calculated percentage for the Canadian claimants increased from 5.8% to 7.7%.

<sup>7</sup> Because Dr. Israel did not appear to include 2013 data in his analysis, Dr. Erdem did not include a 2013 value in his computations.

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5. My initial concerns about the various studies were discussed in my amended direct testimony.<sup>8</sup> Salient problems, particularly with the regression analyses, include the following:
- a. Although a quantity of Devotional programming appears to be included in the Canadian-claimed program listing, none was attributed to the Devotional claimants.
  - b. As a general matter, a regression methodology is simply not appropriate for this Allocation Phase. The Crawford and Israel reports, which with variations are based upon the Waldfogel analysis in the 2004-2005 proceeding, are conceptually flawed to such a degree that they cannot be relied upon. The Gray report is a further variation on this same concept but employs a combination of programming volume and ratings as the dependent variable instead of royalty payments. Although I routinely employ statistical methods in the course of my appraisal practice, my concerns relate primarily to the logic and methodological theories underlying the Crawford, Israel and Gray reports rather than statistical mechanics.<sup>9</sup>
  - c. All of the regressions have the flaw of relying upon volume-based measures, or “time.” This metric is not appropriate for determining the relative value of programming of these diverse categories. During the course of many royalty distribution proceedings, it has been recognized that an MVPD<sup>10</sup> needs to

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<sup>8</sup> See Amended Direct Testimony of John S. Sanders, Mar. 9, 2017, pp. 19-29.

<sup>9</sup> A more detailed critique is contained in the Testimony of Erkan Erdem, Ph.D., Mar. 9, 2017, as well as his Rebuttal Testimony submitted on September 15, 2017.

<sup>10</sup> A Multichannel Video Programming Distributor (“MVPD”) is a media industry term intended to include

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offer an attractive complement of diverse programming to secure and maintain subscribers. Among the necessary program options is Devotional programming, which has a value that exceeds any volume-based algorithm. As an illustration, in the religious realm, a “volume based” approach would lead one to conclude that religion is relatively unimportant to a devotional person, because he or she quantitatively spends only two hours a week (about 1.8% of their waking life) in church. Using a volume-based measure as the foundation for the Allocation Phase is equally irrational. This explains why the Bortz and Horowitz survey-based approaches, which reflect the actual values and decision-making of actual MVPD operators, yield more consistent and meaningful results whether compared to each other or viewed over a time series including several decades of data.

- d. The Gray analysis suffers from an additional weakness in that it relies heavily on a station sample that is completely incompatible with the Nielsen sampling methodology used to collect the metered data on which Dr. Gray ultimately relies. Moreover, even if Dr. Gray’s sampling methodology had not rendered the sample utterly unusable, the Nielsen metered data would still be ill-suited to the Allocation Phase, in general, and to niche programming like the Devotional category that is popular in smaller markets, in particular.

6. In addition to statistical or econometric deficiencies that may be identified, the regression methodologies exhibit a number of crippling flaws:

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cable television companies such as Comcast, telecommunications companies such as Verizon, and satellite companies such as DirecTV, all of which deliver packages of video programming to subscribers for a fee. MVPDs are also subject to the Copyright Royalty regime regarding distant signals.

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- i. As a general observation, the Crawford and Israel methodologies focus on independent variables such as numbers of subscribers, number of channels, population served, and the like, which bear a relationship to CSO programming decisions that is tangential at best. As a result, these particular factors yield conclusions that provide the semblance of statistical significance but are meaningless for the purpose of an Allocation Phase royalty distribution methodology. It is important to note that the Crawford and Israel approaches *assume that there is a causality* between the additional minutes of programming and royalties and the Gray model *assumes a causality with ratings*; however, the *mere appearance of a correlation does not mean that the relationship between the variables is in fact causal*.
- ii. Moreover, the primary dependent variable in the Israel and Crawford regression models—royalty fees derived from statute-based formulas—is an inappropriate surrogate for fair market value because the compulsory royalty fees are predominantly not market-based calculations. They are applied rigidly and do not offer the flexibility that is a key component of any true marketplace transaction.
- iii. Both the Israel and Crawford methodologies rely upon minutes of viewing (i.e., volume) as a determinant of value in the Allocation Phase, and eventually express their results as the incremental fees resulting from an incremental minute broadcast of a certain genre of programming. This is a discredited measure, essentially the criterion of “time.”
- iv. The Gray methodology also relies on time. Consistent with the observations made above, the contention in Dr. Gray’s report that “a measure of the happiness or



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‘utility,’”<sup>11</sup> can be quantified in minutes makes no sense in the Allocation Phase. As a practical matter, a higher level of utility may be derived from a shorter program, whether it is a once-a-week sporting event or 30-minute Sunday sermon.

- v. This conceptual problem is compounded by Dr. Gray’s reliance on Nielsen Local and Distant Viewing Household Meter Data for 2010-2013.<sup>12</sup> During the time period in question, Nielsen set-top and people meters were in use predominantly only in “Top 50” metropolitan areas. They were used primarily to provide an expeditious measurement of national viewing to network programs. For example, this data underlies announcements of the Super Bowl audience or a Presidential debate. Because the meters were disproportionately absent in smaller markets during 2010-2013, this approach underweights the importance of non-network programs that are popular in those markets. Devotional programming is one category that is particularly susceptible to under-counting using such narrowly focused data. In contrast, the diary markets, in which data is developed with the active participation of large and statistically significant samples of viewers in all television markets, is a more appropriate source of data for the purposes of distributing shares within homogeneous categories of programming. Diary data has added appeal because it requires the active participation the respondent. The diary data from the quarterly Nielsen Viewers in Profile (“VIP”) contains superior data to make judgments about viewer preferences and choices at the local level. This is the same data that is employed in Nielsen’s Report of Devotional Programming (“RODP”) reports. This may further

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<sup>11</sup> Testimony of Jeffrey S. Gray, Ph.D., Amended Mar. 9, 2017, p. 7.

<sup>12</sup> Ibid. p. 12.

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explain why the calculated results of the Gray analysis are at odds with the expressed preferences of MPVD operators in the JSC Bortz testimony and Program Suppliers' Horowitz testimony.

- vi. It is further evident that Dr. Gray did not even consider the underlying sampling methodology in the Nielsen meter data he relies upon. As confirmed by two emails from Program Suppliers' counsel, neither Dr. Gray nor any Program Suppliers witness addressed how Nielsen chose the markets to meter, nor did they account or adjust for the fact that Nielsen "national" metered data does not sample all geographical areas, meaning that many of the stations in Dr. Gray's station sample may have been broadcast or retransmitted in geographical areas that were not included in Nielsen's meter samples.<sup>13</sup>
- vii. The Nielsen *National Reference Supplement* provides insight into the limitations of the data that is employed by Dr. Gray.<sup>14</sup> Copies of the National Samples section of this reference guide are included in Appendix D. From a global perspective, the purpose of the Nielsen national methodology is to "provide estimates of in-home audiences of nationally televised programs"<sup>15</sup> From the starting point, the

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<sup>13</sup> See Appendix C, email exchange between Gregory O. Olanarin, Esq. and Matthew J. MacLean, Esq., Mar. 28, 2017, and email exchange between Lucy Holmes Plovnick, Esq. and Matthew J. MacLean, Esq., Mar. 29, 2017. According to Mr. Olanarin: "[N]one of our witnesses considered or relied on documents identifying Nielsen metered markets, or addressing 'how Nielsen decided which markets to meter' in connection with this proceeding. ... To be clear, none of Program Suppliers' witnesses relied on or considered the Nielsen National Reference Supplement publications in connection with their testimony in this proceeding ...." According to Ms. Plovnick, "Program Suppliers' witnesses did not rely on or consider the Nielsen National Reference Supplements in preparing their testimony for this proceeding." The National Reference Supplement is the document that provides insight into the protocols employed in Nielsen's sampling process.

<sup>14</sup> Nielsen, *National Reference Supplement*, 2010-2011, 2011, 2012, and 2012-2013. Bates Nos. PS-2010—C-004029 to PS-2010-2013-C-004607. RESTRICTED – Subject to Protective Order in Docket No. 14-CRB-0010-CD (2010-13).

<sup>15</sup> Ibid. p. 1-1.

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methodology may be appropriate as a “top down” approach to estimate the national audience for a particular nationally-televised program, but not for a granular exercise such as the estimation of the relative value of particular genres of distantly carried local individual station programming at individual MVPD outlets in particular markets.

- viii. The Nielsen national measurement methodology is heavily weighted to the use of set-top meters and local people meters (“LPMs”) which by the 2010-2013 period were rarely used outside of 56 of the largest markets in the United States.<sup>16</sup> [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]
- [REDACTED]

<sup>16</sup> A set-top meter monitors what program is being watched, but not who is watching. A people meter is employed by an individual and can be set to detect what program is being watched by a particular person; hence, a people meter is intended to provide more meaningful information about the demographics of the individuals watching the program. Local People Meters (“LPMs”) were used in 25 Designated Market Areas (“DMAs”) and set-top meters were in use in 31 DMAs. These generally, but not exactly, corresponded to the Top 25 television markets by size and next 31 markets by size, respectively. Diary-only markets comprised approximately 154 DMAs during the period in question.

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[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

- xi. This sampling protocol is particularly discriminatory to Devotional claimants. As indicated in the maps, the area known as the “Bible Belt” is substantially effectively excluded from the meter sampling. As indicated in Appendix F, the states that are deemed to be the most religious (and where Devotional programming is likely to be particularly valued) coincide with the areas where LPMs, in particular, and set-top meters are the scarcest. The diary-only markets include western Virginia and West Virginia, as well as a contiguous belt that stretches from Greenville-New Bern-Washington, North Carolina to Lubbock, Texas, including virtually all of Arkansas and Louisiana. Gallup measures religiosity by surveying variables such as frequency of church attendance and the self-stated importance of religion in one’s life.<sup>17</sup> The

<sup>17</sup> Frank Newport, “Mississippi is the Most Religious U.S. State”, Gallup, Mar. 27, 2012, *available at* <http://www.gallup.com/poll/153479/mississippi-religious-state.aspx>.

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“Bible Belt” markets that are under-represented in the metered markets rank highly on both measures.

- xii. The results implied by the Crawford, Gray, and Israel approaches are largely undermined by actual marketplace behavior. For example, at WGNA, by far the largest distant signal distributor, between 7% and 11% of Devotional programs were compensable during the 2010-2013 time period.<sup>18</sup> As shown in Appendix D to my amended direct testimony, WGNA on average inserted 11 Devotional programs for each one that it re-transmitted. While the inserted programs are not compensable to Devotional claimants in this proceeding, the inclusion of this programming is highly relevant to understanding relative market value in distant markets. The substitution of Devotional programming demonstrates WGN’s strong endorsement of the fair market value of Devotional programming for the distantly retransmitted signal, WGNA. It is market-based evidence from the “seller” in the distant signal equation that the substitution of religious programming for (in most cases) WGNA-owned newscasts (Commercial Television programming that may be highly valuable in a local market but less valuable outside the local market), maintains or enhances the attractiveness of the retransmitted signal in the distant marketplace. WGNA could easily have re-broadcast its own news programming, and thereby qualified for more copyright royalties in the Commercial Television category, or it could have substituted other genres of programming with higher ratings (like some light Program Suppliers sitcom or game show that people will watch because it is on TV, but do not necessarily

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<sup>18</sup> Testimony of Erkan Erdem, Ph.D., Mar. 9, 2017, p. 33 and Written Direct Testimony of James M. Trautman, Dec. 22, 2016, p. 29.

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value). Yet, by its actions, the management of WGNA determined that the substitution of Devotional programming for WGN's local newscasts optimized the marketplace value for the station. This equation provides "seller" support for the conclusion that Devotional programming has marketplace value consistent with the Bortz and Horowitz surveys.

- xiii. A significant external factor that is neglected in the regression analyses is the fact that local cable systems that wanted to carry a local Tribune station were encouraged, if not required, to engage in a package transaction that included WGNA as a distant signal.<sup>19</sup> The incentive associated with this externality is yet another violation of the concept of fair market value and is a pivotal variable that is not reflected in the regression analyses.
- xiv. As demonstrated in the Testimony of Erkan Erdem, Ph.D. dated March 9, 2017, as well as his current rebuttal testimony, the regression analysis results can vary significantly with minor changes in inputs, which help explain the divergent and often contradictory results of the regression studies that were submitted. This also explains the seemingly extraordinary coincidence that each participant's regression methodology maximized the allocation to its own category. Not surprisingly, the four regression analyses (Gray, Crawford, Israel, and George) yield a wide and unpredictable range of results, as shown in Appendix B. For example, based on a four-year average, the Canadian shares range from 0.0% to 7.7%, the Program Suppliers share ranges from 23.1% to 45.4%, and the Joint Sports Claimants range

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<sup>19</sup> See Direct Testimony of Sue Ann R. Hamilton, Dec. 22, 2016, p. 7 (Written Direct Statement of Program Suppliers).

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from 2.9% to 37.5%. The results of each study generally favors the party who presented the study. For example, the Israel study imparts the highest relative share (37.5%) to the Joint Sports Claimants while the Gray study imparts the highest relative value (45.4%) to the Program Suppliers. Dr. Erdem also demonstrated how he could modify the regression methodology to increase the allocation to the Devotional category, while at the same time achieving a superior statistical fit to any other regression methodology offered (as measured by R-squared). But even this demonstration did not motivate Dr. Erdem to embrace the results of such an inadequate, unreliable, and highly manipulable methodology.

7. The observations above highlight the deficiencies of using a volume-based approach, and a regression methodology, in particular. The regression methodologies presented by these other parties are complex and un-intuitive, subject to manipulation, difficult to understand, and, in this matter, tied to volume-based variables that make little sense in an Allocation Phase. I could not credibly advocate this approach in a commercial context, and I have never done so. In my experience, real-life decision-makers at MVPDs do not allocate their program schedules to different categories in this manner. Consequently, I cannot advocate this approach in the Allocation Phase, which is intended to theoretically replicate the behavior of a commercial MVPD decision-maker.
8. The deficiencies of the Crawford, Gray, George, and Israel regression analyses, can be highlighted by a comparison with the fixed sum survey methodology employed in the Bortz/Trautman and Horowitz survey studies. Many of the pitfalls of a regression analysis simply disappear using the survey approach because the survey rests upon the elegantly simple concept of soliciting a determination of fair value directly from the buyer.

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9. In both the Bortz and Horowitz reports, the results were generally consistent. The two studies yielded remarkably similar results in the Devotional category, with a four-year average of 4.7% for Horowitz and 4.6% for Bortz. The results were within a reasonable range in other categories as well. While the JSC and Program Supplier allocations are different due to the Horowitz adjustment for non-team sports, on a combined basis they average 69% in both the Bortz and Horowitz studies. Similarly, the average allocation to CCG is almost identical. The Horowitz analysis gives the PTV approximately 8% more and the CTV approximately 8% less. As discussed in my amended direct testimony, both studies endeavored in different ways to address criticisms made by the Judges in the 2004-2005 proceedings.
10. Moreover, the survey approaches appear to yield results that are independently and mutually reinforcing in the current proceeding, and the Bortz analysis shows remarkable consistency over time. As indicated in the Bortz study,<sup>20</sup> despite methodological changes over the 35-year 1978-2013 period, the allocations to each category have been “relatively consistent” and evolved in a logical manner over time, as highlighted in James Trautman’s direct testimony. In many cases, changes in the results comport with what we know was happening in the video marketplace at the time. For example, an uptick in the PTV category in 2011 coincides with the introduction in the United States of the successful *Downton Abbey* series.
11. Similarly, the decline in the Devotional 2004-2005 share from the 6% to 8% range to the 4.0% to 5.1% range for 2010-2013, and the Program Supplier 2004-2005 share range from 36%-38% to the 27%-36% for 2010-2013, is consistent with Bortz’s special effort to account

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<sup>20</sup> Written Direct Testimony of James M. Trautman, Dec. 22, 2016, pp. 44-45.



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for non-compensable, distant programming on WGNA (and with its failure to account for Devotional programming on Canadian stations).

12. Both surveys addressed concerns raised by the Judges in earlier proceedings and the Horowitz approach informed all that carried WGNA about the compensability issue. Despite smaller practical issues in the development of the surveys, the general similarity of the Bortz and Horowitz surveys yielded consistent results. This observation was quantified in the amended direct testimony of Dr. Erdem, who demonstrated that the presence or absence of instructions relating to valuation of non-compensable programming did not make any statistically significant difference in the result in the Devotional category, thereby undermining any hypothesis that the presence of non-compensable programming biased the survey results in favor of the Devotional category.
13. Although no approximation of fair marketplace valuation in this proceeding is perfect, (and my amended direct testimony identified potential weaknesses in the survey approaches), in my opinion, the Bortz and Horowitz surveys are vastly superior to the regression approach and highlight weaknesses in the use of a regression approach. They measure the right thing, are not easily susceptible to manipulation, and are mutually consistent and reinforcing, even though they are offered by participants whose interests are directly opposed. Professionals in my industry rely on survey approaches like these.
14. Additional refinements to the survey approaches might actually work in favor of the Devotional category. In the 2004-2005 proceeding, the Judges reduced the Bortz allocation to Devotional claimants in large part due to the WGNA compensability issue and distributed this amount pro-rata to certain other claimants; however, no such comparable adjustment was made to the Program Suppliers category in that prior ruling. In light of the amount of non-

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compensable content in the Program Suppliers' category on WGNA, any further adjustment for non-compensability should be applied to Program Suppliers, at least partly to the benefit of Devotional claimants.

15. For example, in the current Bortz study, the percentage of compensable programming for the Program Suppliers is dramatically down from the 2004-2005 time period and is even less than that for the Devotional claimants today.<sup>21</sup> Additionally, due to time-shifting, pre-emptions, and the like, Dr. Erdem has established that the amount of compensable programming reported for certain other categories is overstated. In particular, in 2012 and 2013, the amount of compensable JSC programming may be less than half of what was reported in the Bortz analysis.<sup>22</sup> The Trautman analysis (p. 29) treats the JSC and CTV categories as 100% compensable in all years. In contrast, the Erdem analysis (p. 33) indicates that, on average, only 68.5% of the JSC and 96.4% of the CTV programming may be compensable. While, as discussed above, volume is not in itself a determinant of value, a dramatic decrease in compensable programming for other categories on WGNA could increase the allocation to the Devotional and other categories.
16. Finally, as discussed above, the survey approaches appear to be validated by actual marketplace behavior. WGNA, the most prevalent distantly carried signal, during this time period replaced much of its WGN local programming with Devotional programming when it had other programming options. This decision by the seller in the fair market value equation lends credence to the conclusion that Devotional content has value as determined by the Bortz and Horowitz surveys.

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<sup>21</sup> Written Direct Testimony of James M. Trautman, Dec. 22, 2016, p. 29.

<sup>22</sup> Ibid.; *see also* Testimony of Erkan Erdem, Mar. 9, 2017, p. 30.

**IV. Conclusions**

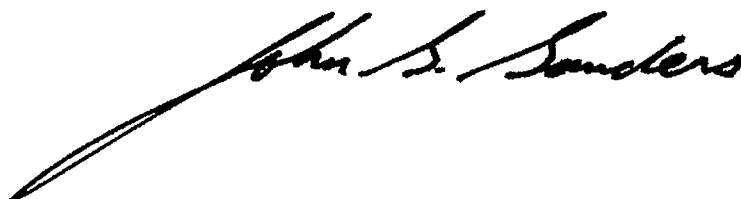
17. Based upon the foregoing, and in addition to any specific computational or statistical flaws identified by Dr. Erdem or others, the regression approaches embodied in the analyses of Drs. Gray, Crawford, Israel, and George are crippled at the starting gate. They shoe-horn volume-based data that is not an appropriate measure for the qualitative decisions that an MVPD must make in formulating its diversity of program options. The Gray approach further suffers because it relies on a station sample that yields unusable information when superimposed upon Nielsen's national meter-based tiered sampling methodology.
18. In light of these flaws, it is my opinion that a constant sum survey of cable operators, as that prepared by Bortz, is the most appropriate methodology for the Allocation Phase of a cable royalty proceeding.

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DECLARATION OF JOHN S. SANDERS

I declare under penalty of perjury that the foregoing testimony is true and correct and of my personal knowledge.

Executed: September 15, 2017

A handwritten signature in black ink, reading "John S. Sanders", is written over a horizontal line.

John S. Sanders, ASA



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Appendix A

Qualifications of John S. Sanders, ASA

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**PROFESSIONAL EXPERIENCE AND QUALIFICATIONS**

**JOHN S. SANDERS**

John S. Sanders has over 30 years of experience in media and communications finance. He is a principal in and founder of the firm of Bond & Pecaro, Inc., a Washington based consulting firm specializing in valuations, asset appraisals, and related financial services for the communications industry since 1986.

Mr. Sanders has been actively involved in both fair market valuations and asset appraisals of over 3,000 communications and media businesses. He has been qualified as an expert in valuation matters regarding communications assets in venues including U.S. District Court for the District of Columbia, U.S. Bankruptcy Court for the Southern District of New York, the Court of Chancery of the State of Delaware, and the American Arbitration Association.

He is a member of the American Society of Appraisers and is an Accredited Senior Appraiser ("ASA") in the specialty of business valuation. He is also a member of the Media Financial Management Association ("MFM") and currently serves on its Board of Directors.

Mr. Sanders received a B.A. Cum Laude in Economics and International Studies (Honors) from Dickinson College. He also holds a Master of Business Administration degree from the University of Virginia in Charlottesville, Virginia.

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**John S. Sanders**

**Speaking Engagements, Publications, and Expert Testimony**

**Additional Speaking Engagements**

46. Media Financial Management Association, Moderator, Alliance for Audited Media Panel, Discussion of measuring print and digital media consumption, Orlando, Florida, May 22, 2017.
47. Media Financial Management Association, Moderator and Presenter on Newspaper Mergers, Acquisitions and Valuation Panel, Presentation on Valuation Trends and Merger Activity, Denver, Colorado, May 23, 2017.



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John S. Sanders  
Additional Publications

26. "As Post-Auction Rainbow" While TV broadcasters' spectrum auction results were underwhelming, new market conditions may provide favorable opportunities," The Financial Manager, May/June 2017.



Appendix B

Summary of Royalty Distribution Recommendations by Study and Year Reflecting  
Changes in Amended Direct Testimony

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<b>2010</b>							
	Joint Sports Claimants	Program Suppliers	Joint Sports Claimants	Program Suppliers	Commercial Television	Canadian Claimants	Settling Devotional Claimants
	Bortz	Horowitz	Israel	Gray	Crawford	George	Erdem (Model 4B)
	Survey	Survey	Regression	Regression	Regression	Regression	Regression
Joint Sports	40.9%	31.9%	37.5%	2.1%	36.9%	n/a	42.0%
Program Suppliers	31.9%	44.2%	26.8%	50.9%	26.6%	n/a	25.0%
Commercial	18.7%	12.4%	22.2%	15.8%	19.1%	n/a	21.5%
Canadian	0.1%	0.0%	0.0%	2.0%	3.2%	7.3%	0.0%
Devotional	4.0%	3.8%	0.0%	1.2%	0.9%	n/a	4.4%
Public	4.4%	7.7%	13.5%	28.0%	13.3%	n/a	7.1%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	n/a	100.0%

<b>2011</b>							
	Joint Sports Claimants	Program Suppliers	Joint Sports Claimants	Program Suppliers	Commercial Television	Canadian Claimants	Settling Devotional Claimants
	Bortz	Horowitz	Israel	Gray	Crawford	George	Erdem (Model 4B)
	Survey	Survey	Regression	Regression	Regression	Regression	Regression
Joint Sports	36.4%	27.1%	37.5%	2.6%	34.4%	n/a	45.3%
Program Suppliers	36.0%	39.8%	26.8%	49.9%	24.4%	n/a	22.4%
Commercial	18.3%	12.9%	22.2%	12.1%	19.6%	n/a	21.6%
Canadian	0.2%	1.0%	0.0%	3.9%	3.2%	7.1%	0.0%
Devotional	4.5%	5.9%	0.0%	2.4%	0.6%	n/a	3.6%
Public	4.7%	13.3%	13.5%	29.1%	17.8%	n/a	7.1%
Total	100.1%	100.0%	100.0%	100.0%	100.0%	n/a	100.0%

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<b>2012</b>							
	Joint Sports Claimants	Program Suppliers	Joint Sports Claimants	Program Suppliers	Commercial Television	Canadian Claimants	Settling Devotional Claimants
	Bortz	Horowitz	Israel	Gray	Crawford	George	Erdem (Model 4B)
	Survey	Survey	Regression	Regression	Regression	Regression	Regression
JSC	37.9%	25.5%	37.5%	2.1%	38.5%	n/a	48.5%
Program Suppliers	28.8%	37.1%	26.8%	36.2%	22.1%	n/a	19.8%
Commercial	22.8%	15.7%	22.2%	15.5%	19.2%	n/a	21.6%
Canadian	0.6%	0.9%	0.0%	3.6%	3.5%	8.2%	0.0%
Devotional	4.8%	5.7%	0.0%	1.1%	0.5%	n/a	3.2%
Public	5.1%	15.1%	13.5%	41.6%	16.3%	n/a	6.9%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	n/a	100.0%

<b>2013</b>							
	Joint Sports Claimants	Program Suppliers	Joint Sports Claimants	Program Suppliers	Commercial Television	Canadian Claimants	Settling Devotional Claimants
	Bortz	Horowitz	Israel	Gray	Crawford	George	Erdem (Model 4B)
	Survey	Survey	Regression	Regression	Regression	Regression	Regression
JSC	37.7%	35.3%	37.5%	4.8%	41.1%	n/a	n/a
Program Suppliers	27.3%	36.1%	26.8%	44.7%	19.3%	n/a	n/a
Commercial	22.7%	9.5%	22.2%	10.6%	18.1%	n/a	n/a
Canadian	1.2%	0.4%	0.0%	5.3%	4.0%	8.3%	n/a
Devotional	5.1%	3.5%	0.0%	1.1%	0.5%	n/a	n/a
Public	6.2%	15.4%	13.5%	33.5%	17.1%	n/a	n/a
Total	100.2%	100.1%	100.0%	100.0%	100.0%	n/a	n/a

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Four Year Average							
	Joint Sports Claimants	Program Suppliers	Joint Sports Claimants	Program Suppliers	Commercial Television	Canadian Claimants	Settling Devotional Claimants
	Bortz	Horowitz	Israel	Gray	Crawford	George	Erdem (Model 4B)
	Survey	Survey	Regression	Regression	Regression	Regression	Regression
JSC	38.2%	30.0%	37.5%	2.9%	37.7%	n/a	45.3%
Program Suppliers	31.0%	39.3%	26.8%	45.4%	23.1%	n/a	22.4%
Commercial	20.6%	12.6%	22.2%	13.5%	19.0%	n/a	21.6%
Canadian	0.5%	0.6%	0.0%	3.7%	3.5%	7.7%	0.0%
Devotional	4.6%	4.7%	0.0%	1.4%	0.6%	n/a	3.7%
Public	5.1%	12.9%	13.5%	33.0%	16.1%	n/a	7.0%
Total	100.1%	100.0%	100.0%	100.0%	100.0%	n/a	100.0%

Source: Claimant initial and amended direct and amended submissions in Consolidated Proceeding No. 14-CRB-0010-CD (2010-13). George report only provided a share for Canadian Claimants. Erdem report submitted in connection with amended direct case on March 9, 2017. Dr. Erdem did not compute 2013 values because the Israel study data upon which he relied did not appear to contain 2013 data. Erdem regression was not calculated to advocate a particular value but rather as a demonstrative to show that modifications to regressions can yield dramatically different results with a higher level of indicated statistical significance than the original model. Horowitz study combines non-team sports such as NASCAR and professional wrestling, into the program supplier category. Totals may not add due to rounding.



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Appendix C

Program Suppliers' E-mails Regarding Nielsen National Reference Supplement



PUBLIC VERSION

John Sanders

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**From:** Olaniran, Greg <goo@msk.com>  
**Sent:** Tuesday, March 28, 2017 4:44 PM  
**To:** MacLean, Matthew J.; Plovnick, Lucy  
**Cc:** 'Arnold Lutzker' (arnie@lutzker.com); Harrington, Clifford M.; Ben Sternberg (Ben@lutzker.com); Nyman, Jessica T.; Warley, Michael A.  
**Subject:** RE: Request to meet and confer regarding MPAA discovery requests and discovery responses

Matt,

Allow me to address your points:

1. Once again, we find your suggestion that Program Suppliers' Follow Up Requests do not comply with our discovery agreement offensive. Hurling meritless allegations of bad faith is really unproductive. Our Follow Up Requests are carefully tailored to only seek documents related to the new sections of your witnesses' testimony, and even then, only to seek documents where it was unclear from our review of SDC's production whether all responsive documents had been produced. Where it was clear to us that SDC had already produced responsive documents we did not submit a Follow Up Request. Our Follow Up Requests are made in good faith and are consistent with precedent in royalty proceedings, which does not impose a limit on the number of discovery requests that a party may serve on another party. Accordingly, we expect SDC to respond to our Follow Up Requests.

2(a). We disagree that any of Program Suppliers' objections are vague or meaningless. Indeed, the Judges have ruled in this very proceeding that the same objections set forth in our discovery responses to SDC are sufficiently clear. However, notwithstanding our disagreement with your characterization of our objections, I can confirm that Program Suppliers are not withholding any responsive documents from production.

2(b). Clearly, you do not fully appreciate Dr. Gray's testimony as you appear to have made several unfounded assumptions about the Nielsen data Dr. Gray relied on in this proceeding. Your statement that "Nielsen collects metered data only from some DMAs, and not from others" is plainly wrong. I direct you to Dr. Gray's testimony wherein he explains that he selected his station samples from the universe of stations retransmitted by CSOs (provided by Cable Data Corporation). Importantly, Dr. Gray's testimony makes no reference to relying on Nielsen's DMAs in his sample selection process. Moreover, the resulting Nielsen data Dr. Gray relied upon is based on Nielsen's *national meter* database, not whatever limited data source you purport is the case. Dr. Gray's testimony is crystal clear on this point. Finally, none of our witnesses considered or relied on documents

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identifying Nielsen metered markets, or addressing “how Nielsen decided which markets to meter” in connection with this proceeding. The Judges have made it clear that such documents are not “underlying documents” subject to production under the Judges’ regulations. See Amended Joint Order On Discovery Motions, Docket Nos. 2012-6 CRB CD 2004-2009 (Phase II) and 2012-7 CRB SD 1999-2009 (Phase II) at 3 (July 30, 2014) (“The Judges interpret the term ‘underlying documents’ as used in the rules to include any document that a party considered in formulating its Written Direct Statement, whether or not the party has chosen to rely on it.”). Program Suppliers have already produced all underlying documents related to our witnesses’ testimonies in this proceeding to SDC. Notwithstanding these objections, to assist SDC, Program Suppliers will produce copies of the Nielsen National Reference Supplement publications which provide information regarding Nielsen’s data collection processes. To be clear, none of Program Suppliers’ witnesses relied on or considered the Nielsen National Reference Supplement publications in connection with their testimony in this proceeding, so the publications are not “underlying documents” within the definition adopted by the Judges, and thus not subject to production under the Copyright Royalty Judges’ discovery regulations. Program Suppliers are thus producing the Nielsen National Reference Supplements as a courtesy to SDC.

2(c). Program Suppliers’ responses to SDC requests 8 and 10 are clear. Program Suppliers have produced all nonprivileged responsive documents related to these requests, and are not withholding any responsive documents.

If you would like to meet and confer with us regarding any of these issues, let us know.



**Gregory O. Olaniran** | Partner, through his professional corporation

T: 202.355.7917 | [goo@msk.com](mailto:goo@msk.com)

**Mitchell Silberberg & Knupp LLP** | [www.msk.com](http://www.msk.com)

1818 N Street NW, 8th Floor, Washington, DC 20036

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---

**From:** MacLean, Matthew J. [<mailto:matthew.macleane@pillsburylaw.com>]

**Sent:** Friday, March 24, 2017 12:05 PM

**To:** Olaniran, Greg; Plovnick, Lucy

**Cc:** 'Arnold Lutzker' ([arnie@lutzker.com](mailto:arnie@lutzker.com)); Harrington, Clifford M.; Ben Sternberg ([Ben@lutzker.com](mailto:Ben@lutzker.com)); Nyman, Jessica T.; Warley, Michael A.

**Subject:** Request to meet and confer regarding MPAA discovery requests and discovery responses

Greg and Lucy,

I am writing to request to meet and confer early next week about two topics:

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1. Once again, we do not believe your follow-up discovery requests comply with the letter and spirit of the parties' agreement (which you helped to draft, I believe) to "make a good-faith effort to review documents produced by parties on January 10, 2017, and [to] not make requests for documents included in that production." In short, the scope of your requests simply does not reflect any meaningful effort to limit the requests to documents not already produced.

2. Somewhat ironically in light of the scope of your own discovery requests to us, your objections to several of our discovery requests to you are not proper. In particular:

a. Your general objections are vague and meaningless. An objection "to the extent that ..." requests are vague, ambiguous, not in accordance with discovery rules, etc. is tantamount to making no objection at all, because it fails to specify any limits as to what you will produce and what you won't produce. The Judges have rejected general objections like this before, as have practically all courts to have considered such boilerplate and generalized objections. We ask you to confirm that you have not withheld documents on the basis of general objections without specifying the scope of documents withheld.

b. Your specific objections to the SDC's requests 1 and 2 are not proper. The viewing information underlying Dr. Gray's regression analysis relies entirely on metered Nielsen data. As you are surely aware (but as Dr. Gray appears not to be aware), Nielsen collects metered data only from some DMAs, and not from others. Somebody involved in the construction of Dr. Gray's and Nielsen's studies must have known and considered which DMAs were metered and which were not in order to select a sample of stations in metered markets from which to collect data. The identification of metered markets therefore underlies Dr. Gray's testimony and Nielsen's testimony and is highly relevant to the representativeness of the samples. How Nielsen decided which markets to meter is also relevant for the same reason, and also underlies both Dr. Gray's and Nielsen's testimony. Please produce the information requested.

c. Your responses to the SDC's requests 8 and 10 say that there are no documents relating to the selection of the "representative examples" used in the surveys underlying the Horowitz report or to the identification of executives with decision-making authority over the carriage of distant broadcast signals. It is impossible to believe that Mr. Horowitz relied solely on programming and personnel information somehow in his own head from "professional knowledge and experience" in making these determinations, without reliance on any documents or analysis. Please review your response and produce all responsive information.

Please let us know if you will comply with these requests, or if you can be available to meet and confer on Monday or Tuesday.

**Matthew J. MacLean** | Partner  
Pillsbury Winthrop Shaw Pittman LLP  
1200 Seventeenth Street NW | Washington, DC 20036-3006  
t 202.663.8183 | f 202.663.8007  
matthew.maclea@pillsburylaw.com | website bio

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LOS ANGELES MIAMI NASHVILLE NEW YORK NORTHERN VIRGINIA  
PALM BEACH SACRAMENTO SAN DIEGO SAN DIEGO NORTH COUNTY  
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John Sanders

**From:** Plovnick, Lucy <lhp@msk.com>  
**Sent:** Wednesday, March 29, 2017 11:59 AM  
**To:** 'rdove@cov.com'; 'Tonsager, Lindsey' (ltonsager@cov.com); 'Cho, Dustin' (dcho@cov.com); 'RHunziker@cov.com'; 'LKSATTERFIELD@SATTERFIELD-PLLC.COM'; 'victor.cosentino@larsongaston.com' (victor.cosentino@larsongaston.com); 'Robert.Garrett@apks.com'; 'Sean.Laane@apks.com'; 'Michael.Kientzle@apks.com'; 'Bryan.Adkins@apks.com'; 'arnie@lutzker.com'; 'Ben Sternberg (ben@lutzker.com)'; 'jeannette@lutzker.com'; Harrington, Clifford M.; MacLean, Matthew J.; Nyman, Jessica T.; Warley, Michael A.; 'jstewart@crowell.com'; 'Mace, Ann' (AMace@crowell.com); 'DERVIN@CROWELL.COM'  
**Cc:** Olaniran, Greg; Dominique, Alesha  
**Subject:** Supplemental Document Production to Allocation Phase Parties, 2010-13 Cable  
**Attachments:** 3.29.17 Plovnick Declaration in Support of Restricted Materials, 2010-13 Cable Allocation (8743482).PDF; PS-2010-13-C-004029-004219.pdf; PS-2010-13-C-004220-004414.pdf; PS-2010-13-C-004415-004607.pdf

Counsel,

Attached please find bates-stamped documents PS-2010-13-C-004029-004607 that Program Suppliers are producing today to the Allocation Phase Parties in response to an informal follow-up discovery request that we received from the Settling Devotional Claimants ("SDC"). These documents are designated as RESTRICTED documents subject to the Judges' Protective Order in this proceeding, so we have also included a declaration supporting the RESTRICTED designation.

Documents PS-2010-13-C-004029-004607 are Nielsen National Reference Supplement publications. Program Suppliers are producing the National Reference Supplement publications to assist SDC in understanding Nielsen's data collection processes. However, to be clear, the Nielsen National Reference Supplements are not underlying documents related to any of Program Suppliers' written testimony or exhibits in this proceeding. See Amended Joint Order On Discovery Motions, Docket Nos. 2012-6 CRB CD 2004-2009 (Phase II) and 2012-7 CRB SD 1999-2009 (Phase II) at 3 (July 30, 2014) ("The Judges interpret the term 'underlying documents' as used in the rules to include any document that a party considered in formulating its Written Direct Statement, whether or not the party has chosen to rely on it."). Program Suppliers' witnesses did not rely on or consider the Nielsen National Reference Supplements in preparing their testimony for this proceeding. Accordingly, Program Suppliers are producing the National Reference Supplements to SDC as a courtesy.

Thanks,  
Lucy



Lucy Holmes Plovnick | Partner, through her professional corporation  
T: 202.355.7918 | [lhp@msk.com](mailto:lhp@msk.com)  
Mitchell Silberberg & Knupp LLP | [www.msk.com](http://www.msk.com)  
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Appendix D

Sample Pages from *National Reference Supplement* 2010-2011, 2011-2012 and 2012-2013



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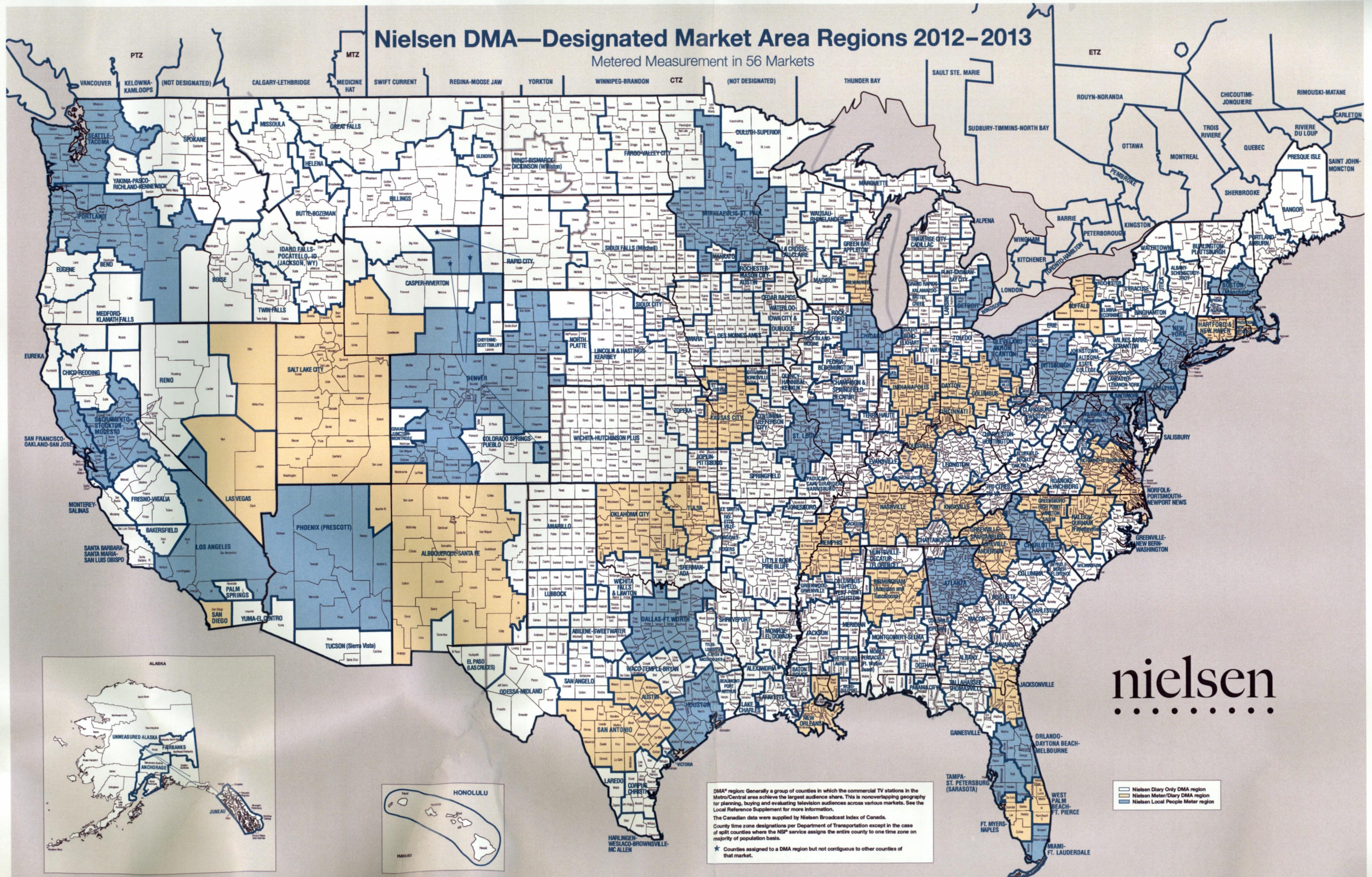
**Appendix E**

**Nielsen DMA – Designated Market Area Regions 2012-2013 and 2013-2014**



# Nielsen DMA—Designated Market Area Regions 2012–2013

Metered Measurement in 56 Markets

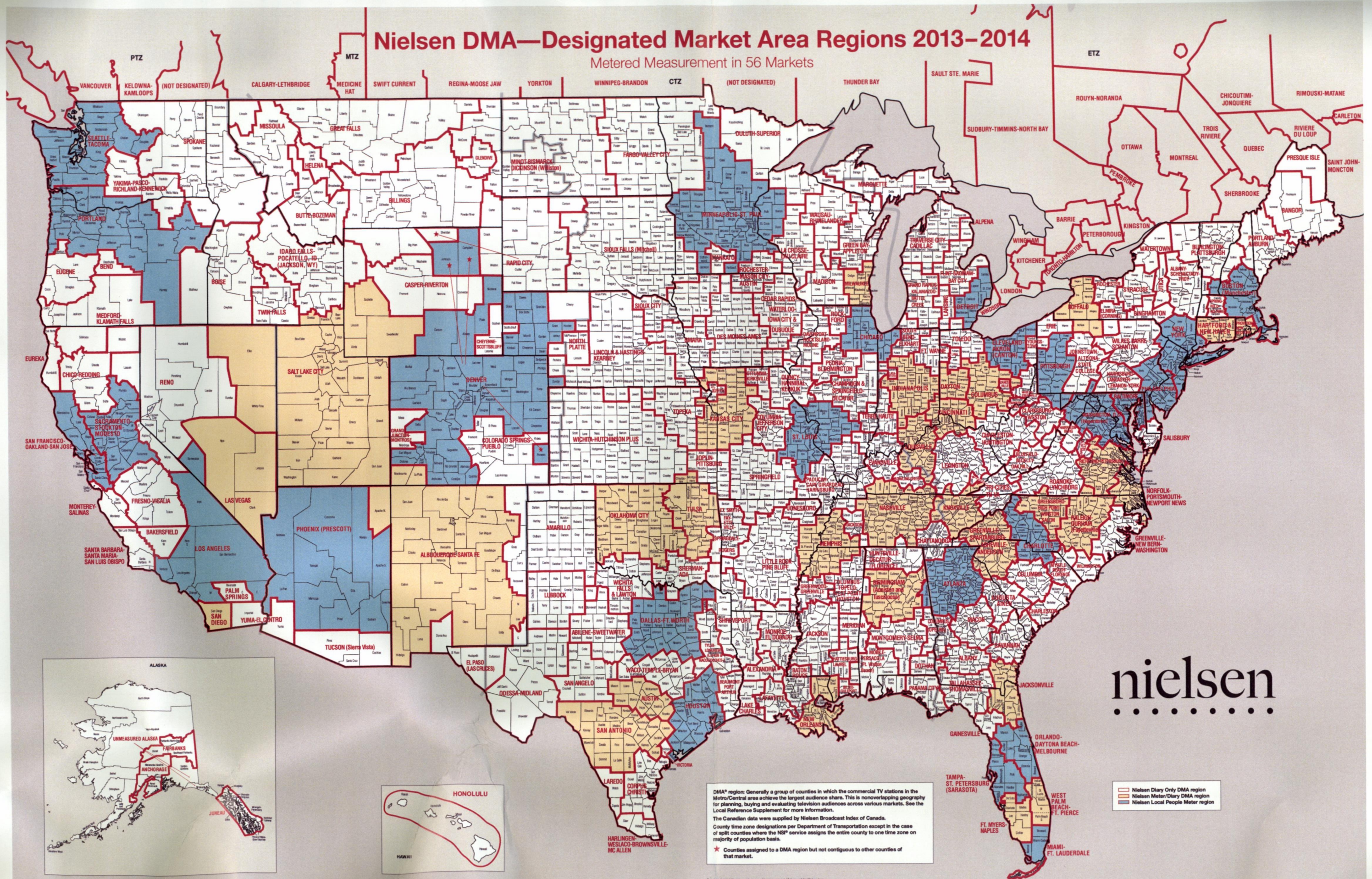


nielsen



# Nielsen DMA—Designated Market Area Regions 2013–2014

Metered Measurement in 56 Markets



nielsen





Appendix F

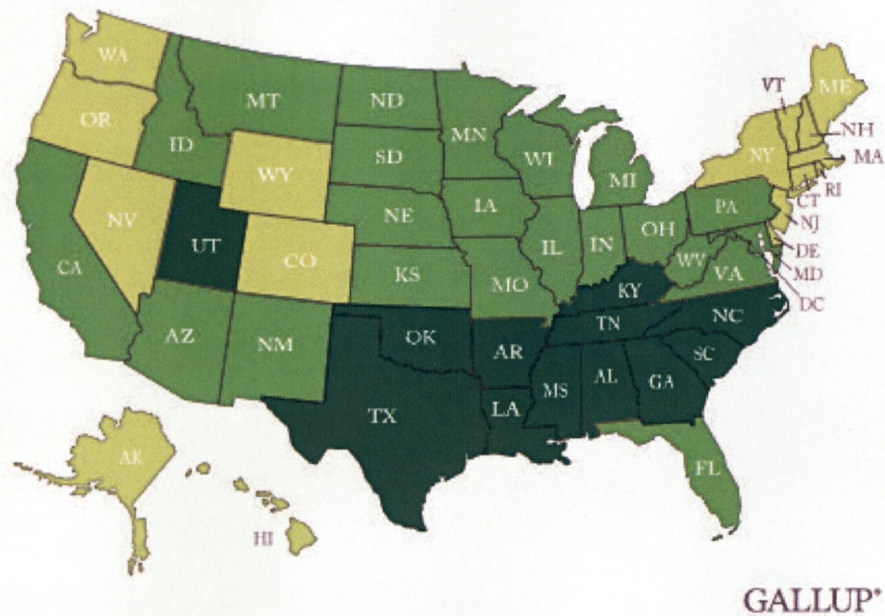
Gallup Map Highlighting Religiosity in the United States



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Religiosity, 2011

■ Above average ■ Average ■ Below average



Source: Frank Newport, "Mississippi is the Most Religious U.S. State", Gallup, March 27, 2012.

F-1

Written Rebuttal Statement of the SDC (Allocation Phase) - Sanders Rebuttal Testimony



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Before the  
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The Library of Congress

In re  
DISTRIBUTION OF CABLE  
ROYALTY FUNDS

)  
)  
) CONSOLIDATED PROCEEDING  
) NO. 14-CRB-0010-CD  
) (2010-13)  
)  
)

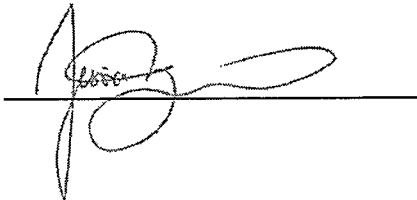
**DECLARATION OF JESSICA T. NYMAN IDENTIFYING  
RESTRICTED MATERIALS IN THE WRITTEN REBUTTAL  
STATEMENT OF THE SETTLING DEVOTIONAL CLAIMANTS**

I, Jessica T. Nyman, pursuant to 28 U.S.C. § 1746 and the Protective Order in the above-referenced proceeding, declare as follows:

1. I am over the age of 18 and am a resident of Maryland. I am an associate at the law firm Pillsbury Winthrop Shaw Pittman LLP. I submit this declaration listing all Restricted materials in the Settling Devotional Claimants' Written Rebuttal Statement in the above-referenced proceeding, along with the basis for the Restricted designation.
2. The redaction log attached hereto identifies every item designated as Restricted, along with the basis for the redaction and a description of the material sufficient to permit any entity not entitled to view the Restricted material to challenge the designation of the material as "Restricted."

I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 15, 2017.

A handwritten signature in black ink, appearing to read "Jessica T. Nyman", is written over a horizontal line.

Jessica T. Nyman

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**Settling Devotional Claimants' Redaction Log**

*In re Distribution of Cable Royalty Funds*, Docket No. 14-CRB-0010-CD

Redaction Number	Basis for Redaction	Description of Redacted Information	Page Number
1	Refers to specific information contained in material designated as Restricted by MPAA-represented Program Suppliers.	Description of Nielsen national measurement methodology.	Erdem Rebuttal Testimony, page 26
2	Refers to specific information contained in material designated as Restricted by MPAA-represented Program Suppliers.	Reference to sampling statistics contained in Nielsen <i>National Reference Supplement</i> .	Erdem Rebuttal Testimony, page 27
3	Refers to specific information contained in material designated as Restricted by MPAA-represented Program Suppliers.	Reference to sampling statistics contained in Nielsen <i>National Reference Supplement</i> .	Erdem Rebuttal Testimony, page 28
4	Refers to specific information contained in material designated as Restricted by MPAA-represented Program Suppliers.	Description of Nielsen national measurement methodology and reference to statistics contained in Nielsen <i>National Reference Supplement</i> .	Sanders Rebuttal Testimony, pages 11-12
5	Identified as Restricted Information by MPAA-represented Program Suppliers.	Sample Pages from Nielsen <i>National Reference Supplement</i> 2010-2011, 2011-2012, and 2012-2013.	Sanders Rebuttal Testimony, Appendix D